GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:19:25 ; Search time 38 Seconds
(without alignments)
82.025 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 478139 seqs, 66318000 residues

Total number of hits satisfying chosen parameters: 478139

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
1: /cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	277	100.0	47	3	US-08-899-437-4	Sequence 4, Appli
2	277	100.0	47	3	US-08-899-437-8	Sequence 8, Appli
3	277	100.0	47	3	US-09-126-121-4	Sequence 4, Appli
4	277	100.0	47	3	US-09-126-121-8	Sequence 8, Appli
5	277	100.0	48	4	US-09-553-769-6	Sequence 6, Appli
6	277	100.0	157	4	US-09-097-681-2	Sequence 2, Appli
7	277	100.0	360	3	US-08-899-437-7	Sequence 7, Appli
8	277	100.0	360	3	US-09-126-121-7	Sequence 7, Appli
9	277	100.0	362	3	US-08-899-437-3	Sequence 3, Appli
10	277	100.0	362	3	US-09-126-121-3	Sequence 3, Appli
11	277	100.0	696	3	US-08-899-437-23	Sequence 23, Appl
12	277	100.0	696	3	US-09-126-121-23	Sequence 23, Appl
13	277	100.0	713	3	US-08-899-437-2	Sequence 2, Appli
14	277	100.0	713	3	US-09-126-121-2	Sequence 2, Appli
15	277	100.0	720	3	US-08-899-437-6	Sequence 6, Appli
16	277	100.0	720	3	US-09-126-121-6	Sequence 6, Appli
17	277	100.0	720	4	US-09-097-681-22	Sequence 22, Appl
18	116.5	42.1	52	1	US-08-417-640A-1	Sequence 1, Appli
19	116.5	42.1	52	1	US-08-760-815-1	Sequence 1, Appli
20	116.5	42.1	52	2	US-08-761-038-1	Sequence 1, Appli
21	116.5	42.1	52	3	US-09-238-182-1	Sequence 1, Appli
22	113.5	41.0	49	3	US-08-899-437-14	Sequence 14, Appl
23	113.5	41.0	49	3	US-09-126-121-14	Sequence 14, Appl
24	113.5	41.0	50	3	US-08-753-007A-12	Sequence 12, Appl
25	113.5	41.0	50	3	US-09-398-496-12	Sequence 12, Appl
26	113.5	41.0	52	1	US-08-417-640A-3	Sequence 3, Appli
27	113.5	41.0	52	1	US-08-760-815-3	Sequence 3, Appli
28	113.5	41.0	52	2	US-08-761-038-3	Sequence 3, Appli
29	113.5	41.0	53	4	US-09-097-681-17	Sequence 17, Appl
30	113.5	41.0	54	1	US-08-179-481-111	Sequence 111, App
31	113.5	41.0	63	3	US-08-341-018-62	Sequence 62, Appl
32	113.5	41.0	63	3	US-08-470-335-221	Sequence 221, App
33	113.5	41.0	63	3	US-08-470-339-221	Sequence 221, App
34	113.5	41.0	63	4	US-08-467-602-415	Sequence 415, App
35	113.5	41.0	63	4	US-08-411-295F-55	Sequence 55, Appl
36	113.5	41.0	63	4	US-08-411-295F-98	Sequence 98, Appl
37	113.5	41.0	65	4	US-08-411-295F-136	Sequence 136, App
38	113.5	41.0	66	1	US-07-847-743B-10	Sequence 10, Appl
39	113.5	41.0	66	1	US-08-456-201-10	Sequence 10, Appl
40	113.5	41.0	66	2	US-08-456-241-10	Sequence 10, Appl
41	113.5	41.0	66	3	US-09-020-880-2	Sequence 2, Appli
42	113.5	41.0	66	3	US-09-101-544-2	Sequence 2, Appli
43	113.5	41.0	66	5	PCT-US92-04295A-10	Sequence 10, Appl
44	113.5	41.0	83	3	US-08-341-018-70	Sequence 70, Appl
45	113.5	41.0	83	3	US-08-470-335-225	Sequence 225, App

ALIGNMENTS

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RESULT 1
US-08-899-437-4
; Sequence 4, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-4

  Query Match             100.0%;  Score 277;  DB 3;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 2.9e-26;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 2
US-08-899-437-8
; Sequence 8, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-8

  Query Match             100.0%;  Score 277;  DB 3;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 2.9e-26;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 3
US-09-126-121-4
; Sequence 4, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-4

  Query Match             100.0%;  Score 277;  DB 3;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 2.9e-26;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 4
US-09-126-121-8
; Sequence 8, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
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;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-8

  Query Match             100.0%;  Score 277;  DB 3;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 2.9e-26;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 5
US-09-553-769-6
; Sequence 6, Application US/09553769
; Patent No. 6544759
; GENERAL INFORMATION:
;  APPLICANT: Harari, Daniel
;  APPLICANT:  Yarden, Yosef
;  TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ErbB-4 RECEPTOR TYROSINE K
;  TITLE OF INVENTION:  SEQUENCES ENCODING SAME AND USES THEREOF
;  FILE REFERENCE: 00/20522
;  CURRENT APPLICATION NUMBER: US/09/553,769
;  CURRENT FILING DATE:  2000-04-21
;  NUMBER OF SEQ ID NOS: 18
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 6
;   LENGTH: 48
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-553-769-6

  Query Match             100.0%;  Score 277;  DB 4;  Length 48;
  Best Local Similarity   100.0%;  Pred. No. 2.9e-26;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
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RESULT 6
US-09-097-681-2
; Sequence 2, Application US/09097681
; Patent No. 6727077
;  GENERAL INFORMATION:
;    APPLICANT:  Young, Paul
;    APPLICANT:  King, C. Richter
;    APPLICANT:  Hijazi, Mai
;    APPLICANT:  Ruben, Steve
;    TITLE OF INVENTION:  Heregulin-Like Factor
;    NUMBER OF SEQUENCES:  22
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Human Genome Sciences, Inc.
;      STREET:  9410 Key West Avenue
;      CITY:  Rockville
;      STATE:  MD
;      COUNTRY:  US
;      ZIP:  20850
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/097,681
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 60/049,942
;      FILING DATE:  17-JUN-1997
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Hoover, Kenley K.
;      REGISTRATION NUMBER:  40,302
;      REFERENCE/DOCKET NUMBER:  PF383PCT
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  301-3098504
;      TELEFAX:  301-309-8439
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;     LENGTH: 157 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-097-681-2

  Query Match             100.0%;  Score 277;  DB 4;  Length 157;
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Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db         31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77


RESULT 7
US-08-899-437-7
; Sequence 7, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  7:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  360 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;      LOCATION:  1-360
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-7

  Query Match             100.0%;  Score 277;  DB 3;  Length 360;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
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Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 8
US-09-126-121-7
; Sequence 7, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  7:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  360 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;      LOCATION:  1-360
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-7

  Query Match             100.0%;  Score 277;  DB 3;  Length 360;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 9
US-08-899-437-3
; Sequence 3, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  362 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  mNRG3 extracellular domainAmino acid seq
;      LOCATION:  1-362
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-3

  Query Match             100.0%;  Score 277;  DB 3;  Length 362;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 10
US-09-126-121-3
; Sequence 3, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
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;       LENGTH:  362 amino acids
;       TYPE:  Amino Acid
;       TOPOLOGY:  Linear
;     FEATURE:
;       NAME/KEY:  mNRG3 extracellular domainAmino acid seq
;       LOCATION:  1-362
;       IDENTIFICATION METHOD:
;       OTHER INFORMATION:
US-09-126-121-3

  Query Match             100.0%;  Score 277;  DB 3;  Length 362;
  Best Local Similarity   100.0%;  Pred. No. 2.3e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 11
US-08-899-437-23
; Sequence 23, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  23:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  696 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  Human NRG3B2
;      LOCATION:  1-696
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-23

  Query Match             100.0%;  Score 277;  DB 3;  Length 696;
  Best Local Similarity   100.0%;  Pred. No. 4.5e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 12
US-09-126-121-23
; Sequence 23, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  23:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  696 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  Human NRG3B2
;      LOCATION:  1-696
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-23

  Query Match             100.0%;  Score 277;  DB 3;  Length 696;
  Best Local Similarity   100.0%;  Pred. No. 4.5e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 13
US-08-899-437-2
; Sequence 2, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
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;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  713 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  Mouse NRG3 (mNRG3)/amino acid seq.
;      LOCATION:  1-713
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-2

  Query Match             100.0%;  Score 277;  DB 3;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 4.7e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 14
US-09-126-121-2
; Sequence 2, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  713 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  Mouse NRG3 (mNRG3)/amino acid seq.
;      LOCATION:  1-713
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-2

  Query Match             100.0%;  Score 277;  DB 3;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 4.7e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 15
US-08-899-437-6
; Sequence 6, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  720 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  hNRG3B1 amino acid sequence
;      LOCATION:  1-720
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-6

  Query Match             100.0%;  Score 277;  DB 3;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 4.7e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


Search completed: November  2, 2004, 13:29:06
Job time : 39 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:37:16 ; Search time 38 Seconds
(without alignments)
82.025 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 47
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 478139 seqs, 66318000 residues

Word size : 0

Total number of hits satisfying chosen parameters: 478139

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : Issued_Patents_AA:*
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2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
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6: /cgn2_6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	47	100.0	47	3	US-08-899-437-4	Sequence 4, Appli
2	47	100.0	47	3	US-08-899-437-8	Sequence 8, Appli
3	47	100.0	47	3	US-09-126-121-4	Sequence 4, Appli
4	47	100.0	47	3	US-09-126-121-8	Sequence 8, Appli
5	47	100.0	48	4	US-09-553-769-6	Sequence 6, Appli
6	47	100.0	157	4	US-09-097-681-2	Sequence 2, Appli
7	47	100.0	360	3	US-08-899-437-7	Sequence 7, Appli
8	47	100.0	360	3	US-09-126-121-7	Sequence 7, Appli
9	47	100.0	362	3	US-08-899-437-3	Sequence 3, Appli
10	47	100.0	362	3	US-09-126-121-3	Sequence 3, Appli
11	47	100.0	696	3	US-08-899-437-23	Sequence 23, Appl
12	47	100.0	696	3	US-09-126-121-23	Sequence 23, Appl
13	47	100.0	713	3	US-08-899-437-2	Sequence 2, Appli
14	47	100.0	713	3	US-09-126-121-2	Sequence 2, Appli
15	47	100.0	720	3	US-08-899-437-6	Sequence 6, Appli
16	47	100.0	720	3	US-09-126-121-6	Sequence 6, Appli
17	47	100.0	720	4	US-09-097-681-22	Sequence 22, Appl
18	8	17.0	8	3	US-08-899-437-19	Sequence 19, Appl
19	8	17.0	8	3	US-09-126-121-19	Sequence 19, Appl
20	7	14.9	401	4	US-09-465-558-70	Sequence 70, Appl
21	7	14.9	407	4	US-09-465-558-68	Sequence 68, Appl
22	7	14.9	509	4	US-09-907-794A-315	Sequence 315, App
23	7	14.9	509	4	US-09-905-125A-315	Sequence 315, App
24	7	14.9	509	4	US-09-902-775A-315	Sequence 315, App
25	7	14.9	509	4	US-09-906-700-315	Sequence 315, App
26	7	14.9	509	4	US-09-903-603A-315	Sequence 315, App
27	6	12.8	97	3	US-09-134-001C-4939	Sequence 4939, Ap
28	6	12.8	149	4	US-09-538-092-691	Sequence 691, App
29	6	12.8	221	4	US-09-270-767-42448	Sequence 42448, A
30	6	12.8	273	4	US-09-248-796A-20117	Sequence 20117, A
31	6	12.8	283	4	US-09-205-258-904	Sequence 904, App
32	6	12.8	344	4	US-09-198-452A-880	Sequence 880, App
33	6	12.8	370	3	US-09-134-001C-3403	Sequence 3403, Ap
34	6	12.8	370	4	US-09-710-279-696	Sequence 696, App
35	6	12.8	370	4	US-09-710-279-1328	Sequence 1328, Ap
36	6	12.8	418	4	US-09-252-991A-20665	Sequence 20665, A
37	6	12.8	427	4	US-09-134-000C-6117	Sequence 6117, Ap
38	6	12.8	615	4	US-09-107-532A-6507	Sequence 6507, Ap
39	6	12.8	700	4	US-09-489-039A-13463	Sequence 13463, A
40	6	12.8	770	4	US-09-543-681A-8009	Sequence 8009, Ap
41	6	12.8	813	4	US-09-328-352-7421	Sequence 7421, Ap
42	6	12.8	997	4	US-09-747-371-3	Sequence 3, Appli
43	6	12.8	1798	4	US-09-845-583A-8	Sequence 8, Appli
44	6	12.8	1798	4	US-09-561-709B-11	Sequence 11, Appl
45	6	12.8	1798	4	US-09-917-254-87	Sequence 87, Appl

ALIGNMENTS

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RESULT 1
US-08-899-437-4
; Sequence 4, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-4

  Query Match             100.0%;  Score 47;  DB 3;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 4.9e-44;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
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Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 2
US-08-899-437-8
; Sequence 8, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-8

  Query Match             100.0%;  Score 47;  DB 3;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 4.9e-44;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 3
US-09-126-121-4
; Sequence 4, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-4

  Query Match             100.0%;  Score 47;  DB 3;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 4.9e-44;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 4
US-09-126-121-8
; Sequence 8, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  47 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
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;    FEATURE:
;      NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;      LOCATION:  1-47
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-8

  Query Match            100.0%;  Score 47;  DB 3;  Length 47;
  Best Local Similarity  100.0%;  Pred. No. 4.9e-44;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 5
US-09-553-769-6
; Sequence 6, Application US/09553769
; Patent No. 6544759
; GENERAL INFORMATION:
;  APPLICANT: Harari, Daniel
;  APPLICANT:  Yarden, Yosef
;  TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ErbB-4 RECEPTOR TYROSINE K
;  TITLE OF INVENTION:  SEQUENCES ENCODING SAME AND USES THEREOF
;  FILE REFERENCE: 00/20522
;  CURRENT APPLICATION NUMBER: US/09/553,769
;  CURRENT FILING DATE:  2000-04-21
;  NUMBER OF SEQ ID NOS: 18
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 6
;   LENGTH: 48
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-09-553-769-6

  Query Match            100.0%;  Score 47;  DB 4;  Length 48;
  Best Local Similarity  100.0%;  Pred. No. 5e-44;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          2 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 48


RESULT 6
US-09-097-681-2
; Sequence 2, Application US/09097681
; Patent No. 6727077
;  GENERAL INFORMATION:
;    APPLICANT:  Young, Paul
;    APPLICANT:  King, C. Richter
;    APPLICANT:  Hijazi, Mai
;    APPLICANT:  Ruben, Steve
;    TITLE OF INVENTION:  Heregulin-Like Factor
;    NUMBER OF SEQUENCES:  22
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Human Genome Sciences, Inc.
;      STREET:  9410 Key West Avenue
;      CITY:  Rockville
;      STATE:  MD
;      COUNTRY:  US
;      ZIP:  20850
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/097,681
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 60/049,942
;      FILING DATE:  17-JUN-1997
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Hoover, Kenley K.
;      REGISTRATION NUMBER:  40,302
;      REFERENCE/DOCKET NUMBER:  PF383PCT
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  301-3098504
;      TELEFAX:  301-309-8439
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;     LENGTH: 157 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-097-681-2

  Query Match            100.0%;  Score 47;  DB 4;  Length 157;
  Best Local Similarity  100.0%;  Pred. No. 1.4e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db         31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77


RESULT 7
US-08-899-437-7
; Sequence 7, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  7:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  360 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;      LOCATION:  1-360
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-7

  Query Match            100.0%;  Score 47;  DB 3;  Length 360;
  Best Local Similarity  100.0%;  Pred. No. 3e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
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Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 8
US-09-126-121-7
; Sequence 7, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  7:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  360 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;      LOCATION:  1-360
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-7

  Query Match             100.0%;  Score 47;  DB 3;  Length 360;
  Best Local Similarity   100.0%;  Pred. No. 3e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 9
US-08-899-437-3
; Sequence 3, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  362 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  mNRG3 extracellular domainAmino acid seq
;      LOCATION:  1-362
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-3

  Query Match             100.0%;  Score 47;  DB 3;  Length 362;
  Best Local Similarity   100.0%;  Pred. No. 3e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              ||||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 10
US-09-126-121-3
; Sequence 3, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
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;       LENGTH:  362 amino acids
;       TYPE:  Amino Acid
;       TOPOLOGY:  Linear
;     FEATURE:
;       NAME/KEY:  mNRG3 extracellular domainAmino acid seq
;       LOCATION:  1-362
;       IDENTIFICATION METHOD:
;       OTHER INFORMATION:
US-09-126-121-3

  Query Match             100.0%;  Score 47;  DB 3;  Length 362;
  Best Local Similarity   100.0%;  Pred. No. 3e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 11
US-08-899-437-23
; Sequence 23, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  23:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  696 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  Human NRG3B2
;      LOCATION:  1-696
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-23

  Query Match             100.0%;  Score 47;  DB 3;  Length 696;
  Best Local Similarity   100.0%;  Pred. No. 5.4e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 12
US-09-126-121-23
; Sequence 23, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  23:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  696 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  Human NRG3B2
;      LOCATION:  1-696
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-23

  Query Match             100.0%;  Score 47;  DB 3;  Length 696;
  Best Local Similarity   100.0%;  Pred. No. 5.4e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 13
US-08-899-437-2
; Sequence 2, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
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;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/899,437
;       FILING DATE:  24-Jul-1997
;       CLASSIFICATION:  435
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Conley, Deirdre L.
;       REGISTRATION NUMBER:  36,487
;       REFERENCE/DOCKET NUMBER:  P1084R1
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  650/225-2066
;       TELEFAX:  650/952-9881
;   INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  713 amino acids
;       TYPE:  Amino Acid
;       TOPOLOGY:  Linear
;     FEATURE:
;       NAME/KEY:  Mouse NRG3 (mNRG3)/amino acid seq.
;       LOCATION:  1-713
;       IDENTIFICATION METHOD:
;       OTHER INFORMATION:
US-08-899-437-2

  Query Match             100.0%;  Score 47;  DB 3;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 5.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 14
US-09-126-121-2
; Sequence 2, Application US/09126121
; Patent No. 6252051
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/126,121
;      FILING DATE:  30-Jul-1998
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1D1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  713 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  Mouse NRG3 (mNRG3)/amino acid seq.
;      LOCATION:  1-713
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-09-126-121-2

  Query Match             100.0%;  Score 47;  DB 3;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 5.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 15
US-08-899-437-6
; Sequence 6, Application US/08899437
; Patent No. 6121415
;  GENERAL INFORMATION:
;    APPLICANT:  Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;    TITLE OF INVENTION:  ErbB Receptor-Specific Neuregulin Related
;    TITLE OF INVENTION:  Ligands and Uses Therefor
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Genentech, Inc.
;      STREET:  1 DNA Way
;      CITY:  South San Francisco
;      STATE:  California
;      COUNTRY:  USA
;      ZIP:  94080
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  3.5 inch, 1.44 Mb floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  WinPatin (Genentech)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/899,437
;      FILING DATE:  24-Jul-1997
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Conley, Deirdre L.
;      REGISTRATION NUMBER:  36,487
;      REFERENCE/DOCKET NUMBER:  P1084R1
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  650/225-2066
;      TELEFAX:  650/952-9881
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  720 amino acids
;      TYPE:  Amino Acid
;      TOPOLOGY:  Linear
;    FEATURE:
;      NAME/KEY:  hNRG3B1 amino acid sequence
;      LOCATION:  1-720
;      IDENTIFICATION METHOD:
;      OTHER INFORMATION:
US-08-899-437-6

  Query Match             100.0%;  Score 47;  DB 3;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 5.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


Search completed: November  2, 2004, 13:46:56
Job time : 39 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:10:39 ; Search time 157 Seconds
(without alignments)
107.390 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 2002273 seqs, 358729299 residues

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_23Sep04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	277	100.0	47	2	AAW97622	Aaw97622 Human neu
2	277	100.0	48	5	AAG66046	Aag66046 Mouse NRG
3	277	100.0	52	6	AAE36807	Aae36807 Human neu
4	277	100.0	157	2	AAY05451	Aay05451 Human her
5	277	100.0	157	8	ADN48870	Adn48870 Human her
6	277	100.0	360	2	AAW97621	Aaw97621 Human neu
7	277	100.0	362	2	AAW97620	Aaw97620 Mouse neu
8	277	100.0	502	5	ABB08776	Abb08776 Human neu
9	277	100.0	696	2	AAW97619	Aaw97619 Human neu
10	277	100.0	696	5	ABG32080	Abg32080 Novel hum
11	277	100.0	713	2	AAW97617	Aaw97617 Mouse neu
12	277	100.0	713	5	ABG32061	Abg32061 Mouse nov
13	277	100.0	720	2	AAW97618	Aaw97618 Human neu
14	277	100.0	720	2	AAY05452	Aay05452 Human her
15	277	100.0	720	5	ABG32065	Abg32065 Human nov
16	277	100.0	720	8	ADN48890	Adn48890 Human her
17	116.5	42.1	52	2	AAW05182	Aaw05182 Neu diffe
18	116.5	42.1	52	3	AAY69983	Aay69983 NDF/hereg
19	116.5	42.1	52	3	AAB12602	Aab12602 Human NDF
20	113.5	41.0	52	2	AAW05184	Aaw05184 Neu diffe
21	113.5	41.0	53	6	AAE36803	Aae36803 Human neu
22	113.5	41.0	53	8	ADN48885	Adn48885 Human her
23	113.5	41.0	63	2	AAR55659	Aar55659 EGFL2. 3/
24	113.5	41.0	63	2	AAR46918	Aar46918 EGFL2. 3/
25	113.5	41.0	63	2	AAR67250	Aar67250 Human epi
26	113.5	41.0	63	2	AAR96076	Aar96076 Epidermal
27	113.5	41.0	63	2	AAW09363	Aaw09363 EGFL2. 8/
28	113.5	41.0	63	2	AAR87461	Aar87461 Epidermal
29	113.5	41.0	66	3	AAB36702	Aab36702 EGF-like
30	113.5	41.0	83	2	AAR55663	Aar55663 EGFL6. 3/
31	113.5	41.0	83	2	AAR46922	Aar46922 EGFL6. 3/
32	113.5	41.0	83	2	AAR67254	Aar67254 Human epi
33	113.5	41.0	83	2	AAR96080	Aar96080 Epidermal
34	113.5	41.0	83	2	AAW09367	Aaw09367 EGFL6. 8/
35	113.5	41.0	83	2	AAR87465	Aar87465 Epidermal
36	113.5	41.0	88	2	AAR55662	Aar55662 EGFL5. 3/
37	113.5	41.0	88	2	AAR46921	Aar46921 EGFL5. 3/
38	113.5	41.0	88	2	AAR67253	Aar67253 Human epi
39	113.5	41.0	88	2	AAR96079	Aar96079 Epidermal
40	113.5	41.0	88	2	AAW09366	Aaw09366 EGFL5. 8/
41	113.5	41.0	88	2	AAR87464	Aar87464 Epidermal
42	113.5	41.0	99	5	ABJ00043	Abj00043 Human neu
43	113.5	41.0	99	5	ABJ00081	Abj00081 Human neu
44	113.5	41.0	99	8	ADH77520	Adh77520 Human neu
45	113.5	41.0	101	4	AAG67933	Aag67933 Human NRG

ALIGNMENTS

RESULT 1
AAW97622
ID AAW97622 standard; protein; 47 AA.
XX
AC AAW97622;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 EGF-like domain.
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis; epidermal growth factor; EGF;
KW immunoadhesin.
XX
OS Homo sapiens.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX
PS Claim 30; Page 64; 101pp; English.
XX
CC This is the epidermal growth factor (EGF)-like domain of human neuregulin
CC related ligand NRG3 (see also AAW97618), a novel member of the EGF-like
CC family of protein ligands that binds to the ErbB4 receptor and activates
CC ErbB4 receptor tyrosine phosphorylation. The EGF-1 like domain of NRG3 is
CC distinct from the EGF-like domains of NRG1 and NRH2. The invention
CC provides human and murine polypeptides (see also AAW97617) that have at
CC least 75% homology to the NRG3 EGF-like domain, as well as expression
CC vectors, host cells and methods for the recombinant production of novel
CC NRG3s. The NRG3 polypeptides and polynucleotides and can be used to
CC enhance the survival, proliferation or differentiation of cells having

CC the ErbB4 receptor in vivo and in vitro. They can be used to prevent or
CC treat damage to a nerve or damage to other NRG3-expressing or NRG3-
CC responsive cells, e.g. brain, heart, or kidney cells. In particular, they
CC can be used to treat diseases which involve neural cell growth such as
CC demyelination, or damage or loss of glial cells (e.g. multiple
CC sclerosis). They can be used to treat patients whose nervous system has
CC been damaged by e.g. trauma, surgery, stroke, ischaemia, infection,
CC metabolic disease, nutritional deficiency, malignancy, or toxic agents.
CC NRG3 can also be used to treat motor neuron disorders such as amyotrophic
CC lateral sclerosis (Lou Gehrig's disease), Bell's palsy, conditions
CC involving spinal muscular atrophy or paralysis, neurodegenerative
CC disorders such as Alzheimer's disease, Parkinson's disease, epilepsy,
CC multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness,
CC and Meniere's disease. They can also be used to treat neuropathies
CC associated with systemic disease including post-polio syndrome,
CC hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's
CC disease, abetalipoproteinemia, Tangier disease, Krabbe's disease,
CC metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas
CC syndrome, to treat disease of skeletal muscle of smooth muscle, such as
CC muscular dystrophy or diseases caused by skeletal or smooth muscle
CC wasting. The products can also be used for detection, diagnosis, for the
CC production of transgenic or knockout animals or for drug screening. A
CC claimed immunoadhesin comprises the human NRG3 EGF-like domain fused to
CC an immunoglobulin sequence
XX
SQ Sequence 47 AA;

Query Match 100.0%; Score 277; DB 2; Length 47;
Best Local Similarity 100.0%; Pred. No. 7.1e-21;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47

RESULT 2
AAG66046
ID AAG66046 standard; peptide; 48 AA.
XX
AC AAG66046;
XX
DT 27-FEB-2002 (first entry)
XX
DE Mouse NRG-3 EGF-like motif sequence.
XX
KW ErbB-4; neuregulin-4; NRG-4; pro-NRG-4; neuroprotective; vulnerary;
KW cerebroprotective; vasotropic; antiparkinsonian; anticonvulsant;
KW cytostatic; nootropic; EGF; NRG-3.
XX
OS Mus musculus.
XX
PN WO200181540-A2.
XX
PD 01-NOV-2001.
XX
PF 20-APR-2001; 2001WO-IL000371.
XX
PR 21-APR-2000; 2000US-00553769.
XX
PA (YEDA) YEDA RES & DEV CO LTD.
XX
PI Harari D, Yarden Y;
XX
DR WPI; 2002-041398/05.
XX
PT Novel ErbB-4 ligand, referred as neuregulin (NRG)-4 and polynucleotide
PT sequences encoding NRG-4, useful for upregulating or downregulating ErbB-
PT 4 receptor activity to treat Alzheimer's disease, stroke, gastric cancer.
XX
PS Disclosure; Fig 1c; 153pp; English.
XX
CC The invention relates to a novel ErbB-4 ligand, neuregulin-4 (NRG-4). NRG
CC -4 binds to mammalian ErbB-4 receptor and can be expressed by standard
CC recombinant methodology. Pharmaceutical compositions comprising NRG-4 are
CC useful for regulating an endogenous protein affecting ErbB-4 receptor
CC activity in vivo. They are also useful for treating or preventing a
CC disease condition or syndrome associated with disregulation of an
CC endogenous protein affecting ErbB-4 receptor activity, e.g., amyotrophic
CC lateral sclerosis (Lou Gehrig's disease), Bell's palsy, spinal muscular
CC atrophy, brain trauma, stroke, ischemia, Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, neuropathy, muscular dystrophy, extramammary
CC Paget's disease, gastric, pancreatic, prostate, breast and ovarian
CC cancer, cervical carcinoma, endometrial adenocarcinoma, pancreatic D
CC cells-somatostatinoma and Zollinger-Ellison syndrome. The agent comprised
CC in the pharmaceutical composition includes a polypeptide (e.g., a soluble
CC ligand binding domain of ErbB-4 i.e., IgB4; or a monoclonal, polyclonal,
CC humanized, single chain antibody or an immunoreactive derivative of an
CC antibody) capable of binding the endogenous protein affecting ErbB-4
CC receptor activity. Traceable synthetic/recombinant NRG-4-tagged molecules
CC can serve as a diagnostic tool in which cells binding NRG-4 can be
CC measured. Sequences AAG66044-53 represent the EGF-like motifs of various
CC growth factors
XX
SQ Sequence 48 AA;

Query Match 100.0%; Score 277; DB 5; Length 48;
Best Local Similarity 100.0%; Pred. No. 7.2e-21;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 2 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 48

RESULT 3
AAE36807
ID AAE36807 standard; protein; 52 AA.
XX
AC AAE36807;
XX
DT 07-AUG-2003 (first entry)
XX
DE Human neuregulin 3 EGF-like domain.
XX
KW Epidermal growth factor receptor; EGFR; therapy; psoriasis; carcinoma;
KW cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human;
KW receptor; EGF; neuregulin 3.
XX
OS Homo sapiens.
XX
PN WO2003014159-A1.
XX
PD 20-FEB-2003.
XX
PF 05-AUG-2002; 2002WO-AU001042.
XX
PR 03-AUG-2001; 2001AU-00006827.
PR 03-AUG-2001; 2001AU-00006828.
PR 01-NOV-2001; 2001US-0335393P.
PR 01-NOV-2001; 2001US-0336560P.
PR 31-MAY-2002; 2002AU-00002731.
PR 11-JUN-2002; 2002US-0388171P.
XX
PA (CSIR) COMMONWEALTH SCI & IND RES ORG.
PA (BIOM-) BIOMOLECULAR RES INST LTD.
PA (HALL-) HALL INST MEDICAL RES WALTER & ELIZA.
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Adams TE, Burgess AW, Elleman TC, Garrett TPJ, Jorissen RN;
PI Lou M, Lovrecz GO, Mckern NM, Nice EC, Ward CW;
XX
DR WPI; 2003-268181/26.
XX
PT Selecting or designing compounds that interact with or inhibit formation

PT of active dimers of the EGF receptor family, and useful for the
PT prevention and treatment of disorders, such as psoriasis and cancer of
PT the breast, brain or colon.
XX
PS Disclosure; Fig 2; 354pp; English.
XX
CC The invention relates to a method of selecting or designing a compound
CC that interacts with or inhibits the formation of active dimers of a
CC receptor of the epidermal growth factor receptor (EGFR) family. The
CC methods and compositions of the invention are useful for the prevention
CC and treatment of disorders associated with signalling by a molecule of
CC the EGFR family such as psoriasis and cancer of the pancreas, breast,
CC brain, colon, prostate, ovary, cervix, lung, head and neck, melanoma,
CC rhabdomyosarcoma, mesothelioma, squamous carcinomas of the skin and
CC glioblastomas. The present sequence is epidermal growth factor (EGF) like
CC domain of human neuregulin 3 protein. This sequence is used to illustrate
CC the method of the invention
XX
SQ Sequence 52 AA;

Query Match 100.0%; Score 277; DB 6; Length 52;
Best Local Similarity 100.0%; Pred. No. 7.8e-21;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
Db 2 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 48

RESULT 4
AAY05451
ID AAY05451 standard; protein; 157 AA.
XX
AC AAY05451;
XX
DT 06-JUL-1999 (first entry)
XX
DE Human heregulin-like factor sequence.
XX
KW Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
KW neural system disorder; cancer.
XX
OS Homo sapiens.
XX
PN WO9857989-A1.
XX
PD 23-DEC-1998.
XX
PF 16-JUN-1998; 98WO-US012403.
XX
PR 17-JUN-1997; 97US-0049942P.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
PA (GEOU) UNIV GEORGETOWN.
XX
PI Young P, Ruben SM, King CR, Hijazi MM;
XX
DR WPI; 1999-095327/08.
DR N-PSDB; AAX36423.
XX
PT New isolated heregulin-like factor - used to develop products for the
PT diagnosis and treatment of disorders involving regulation of cell growth,
PT particularly cancers.
XX
PS Claim 17; Page 86-87; 118pp; English.
XX
CC This sequence is the human heregulin-like factor (HLF) of the invention.
CC The HLF is involved in the regulation of cell growth. Detection of
CC different levels of expression of the HLF gene can be used for the
CC diagnosis of disorders, e.g. in the neural system. In particular,
CC detection of different levels of HLF gene expression in cells or body
CC fluid of an individual can be used for diagnosing cancer. The products
CC can also be used in the treatment of disorders involving abnormal levels
CC of HLF activity
XX
SQ Sequence 157 AA;

Query Match 100.0%; Score 277; DB 2; Length 157;
Best Local Similarity 100.0%; Pred. No. 2.1e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
Db 31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77

RESULT 5
ADN48870
ID ADN48870 standard; protein; 157 AA.
XX
AC ADN48870;
XX
DT 15-JUL-2004 (first entry)
XX
DE Human heregulin-like factor (HLF) protein.
XX
KW HLF; heregulin-like factor; diagnosis; cancer; gene therapy; human.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Domain 26. .93
FT /note = EGF domain
XX
PN US6727077-B1.
XX
PD 27-APR-2004.
XX
PF 16-JUN-1998; 98US-00097681.
XX
PR 17-JUN-1997; 97US-0049492P.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
PA (GEOU) UNIV GEORGETOWN MEDICAL CENT.
XX
PI Young PE, King CR, Hijazi M, Ruben SM;
XX
DR WPI; 2004-338520/31.
DR N-PSDB; ADN48869.
XX
PT New heregulin-like factor (HLF) nucleic acid or polypeptide, useful for
PT preparing a composition for diagnosing or treating cancer.
XX
PS Claim 1; SEQ ID NO 2; 48pp; English.
XX
CC The present invention relates to novel heregulin-like factor (HLF)
CC polypeptides and the encoding polynucleotides. The invention is useful
CC for preparing a composition for diagnosing and treating cancer. The
CC invention is also useful in gene therapy. The present sequence is human
CC heregulin-like factor (HLF) protein.
XX
SQ Sequence 157 AA;

Query Match 100.0%; Score 277; DB 8; Length 157;
Best Local Similarity 100.0%; Pred. No. 2.1e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
Db 31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77

RESULT 6
AAW97621
ID AAW97621 standard; protein; 360 AA.
XX

AC AAW97621;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 extracellular domain.
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX
OS Homo sapiens.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX
PS Claim 5(a); Page 69-70; 101pp; English.
XX
CC This is the extracellular domain (ECD, aa1-360 of human neuregulin
CC related ligand NRG3 (see also AAW97618), a novel member of the epidermal
CC growth factor (EGF)-like family of protein ligands. NRG3 binds to the
CC ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4
CC receptor tyrosine phosphorylation. The invention provides human and
CC murine polypeptides (see also AAW97617) that have at least 75% homology
CC to the NRG3 ECD, as well as expression vectors, host cells and methods
CC for the recombinant production of novel NRG3s. The NRG3 polypeptides and
CC polynucleotides and can be used to enhance the survival, proliferation or
CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC They can be used to prevent or treat damage to a nerve or damage to other
CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC cells. In particular, they can be used to treat diseases which involve
CC neural cell growth such as demyelination, or damage or loss of glial
CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC nervous system has been damaged by e.g. trauma, surgery, stroke,
CC ischaemia, infection, metabolic disease, nutritional deficiency,
CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening
XX
SQ Sequence 360 AA;

Query Match 100.0%; Score 277; DB 2; Length 360;
Best Local Similarity 100.0%; Pred. No. 4.6e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332

RESULT 7
AAW97620
ID AAW97620 standard; protein; 362 AA.
XX
AC AAW97620;
XX
DT 10-MAY-1999 (first entry)
XX
DE Mouse neuregulin related ligand NRG3 extracellular domain.
XX
KW Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX
OS Mus sp.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX
PS Claim 5(a); Page 62-63; 101pp; English.
XX
CC This is the extracellular domain (ECD, aa1-362) of murine neuregulin
CC related ligand NRG3 (see also AAW97617), a novel member of the epidermal
CC growth factor (EGF)-like family of protein ligands. NRG3 binds to the
CC ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4
CC receptor tyrosine phosphorylation. The invention provides human and
CC murine polypeptides (see also AAW97618) that have at least 75% homology
CC to the NRG3 ECD, as well as expression vectors, host cells and methods
CC for the recombinant production of novel NRG3s. The NRG3 polypeptides and
CC polynucleotides and can be used to enhance the survival, proliferation or
CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC They can be used to prevent or treat damage to a nerve or damage to other
CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC cells. In particular, they can be used to treat diseases which involve
CC neural cell growth such as demyelination, or damage or loss of glial
CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC nervous system has been damaged by e.g. trauma, surgery, stroke,
CC ischaemia, infection, metabolic disease, nutritional deficiency,
CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening

```
XX
SQ   Sequence 362 AA;

  Query Match             100.0%;  Score 277;  DB 2;  Length 362;
  Best Local Similarity   100.0%;  Pred. No. 4.6e-20;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 8
ABB08776
ID   ABB08776 standard; protein; 502 AA.
XX
AC   ABB08776;
XX
DT   16-MAY-2002  (first entry)
XX
DE   Human neuregulin 55 SEQ ID NO 2.
XX
KW   Human; neuregulin 55; nervous system; development; neuropsychopathy;
KW   tumour; inflammation; immunological disease.
XX
OS   Homo sapiens.
XX
PN   CN1324826-A.
XX
PD   05-DEC-2001.
XX
PF   19-MAY-2000; 2000CN-00115761.
XX
PR   19-MAY-2000; 2000CN-00115761.
XX
PA   (BODE-) BODE GENE DEV CO LTD SHANGHAI.
XX
PI   Mao Y,  Xie Y;
XX
DR   WPI; 2002-217507/28.
DR   N-PSDB; ABL41244.
XX
PT   New polypeptide human neuregulin 55 and polynucleotides for encoding
PT   same.
XX
PS   Claim 1; Page 27-28 (Disclosure); 35pp; Chinese.
XX
CC   The invention relates to human neuregulin 55, polynucleotide for coding
CC   this polypeptide and a method for producing this polypeptide by using DNA
CC   recombination technique. The invention also discloses the method for
CC   curing several diseases, such as nervous system developmental diseases,
CC   neuropsychopathy, other nervous system diseases, development disturbance,
CC   tumours, inflammations and immunological disease by using said
CC   polypeptide. The invention also discloses an antagonist for resisting
CC   said polypeptide and its therapeutic action and also discloses the
CC   application of polynucleotide to coding this novel human neuregulin 55.
CC   The present sequence is that of human neuregulin 55
XX
SQ   Sequence 502 AA;

  Query Match             100.0%;  Score 277;  DB 5;  Length 502;
  Best Local Similarity   100.0%;  Pred. No. 6.3e-20;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db         92 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 138


RESULT 9
AAW97619
ID   AAW97619 standard; protein; 696 AA.
XX
AC   AAW97619;
XX
DT   10-MAY-1999  (first entry)
XX
DE   Human neuregulin related ligand NRG3 (splice variant).
XX
KW   Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW   signal transduction; nervous system disorder; neurodegeneration;
KW   neuropathy; therapy; diagnosis; splice variant.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          1. .360
FT                   /note= "extracellular domain, specifically claimed in
FT                   Claim 5(a)"
FT   Region          66. .91
FT                   /note= "hydrophobic region"
FT   Region          101. .284
FT                   /note= "mucin-like Ser/Thr-rich region, contains sites
FT                   for O-linked glycosylation"
FT   Domain          285. .354
FT                   /note= "EGF-like domain"
FT   Domain          356. .394
FT                   /note= "transmembrane domain"
XX
PN   WO9902681-A1.
XX
PD   21-JAN-1999.
XX
PF   30-JUN-1998;   98WO-US013411.
XX
PR   09-JUL-1997;   97US-0052019P.
PR   24-JUL-1997;   97US-00899437.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Godowski PJ,  Mark MR,  Zhang D;
XX
DR   WPI; 1999-120882/10.
DR   N-PSDB; AAX06989.
XX
PT   New isolated neuregulin related ligand-3 - used to develop products for
PT   treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT   malignancy, Alzheimer's disease or Down's syndrome.
XX
PS   Example 1; Page 78-81; 101pp; English.
XX
CC   This is the amino acid sequence of splice variant hNGR3B2 of human
CC   neuregulin related ligand NRG3, a novel member of the epidermal growth
CC   factor (EGF)-like family of protein ligands that binds to the ErbB4
CC   receptor, but not to the ErbB2 or ErbB3 receptor, and which activates
CC   ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from
CC   the nucleotide sequence of a cDNA clone (see AAX06989) from a foetal
CC   brain library. hNGR3B2 lacks amino acids 529-552 of hNGR3B1 (see
CC   AAW97618) but retains the EGF- like domain and is expected to exhibit
CC   biological activity. The invention provides human and murine NRG3
CC   polypeptides (see AAW97617), expression vectors, host cells and methods
CC   for the recombinant production of NRG3s. The NRG3 polypeptides and
CC   polynucleotides and can be used to enhance the survival, proliferation or
CC   differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC   They can be used to prevent or treat damage to a nerve or damage to other
CC   NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC   cells. In particular, they can be used to treat diseases which involve
CC   neural cell growth such as demyelination, or damage or loss of glial
CC   cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC   nervous system has been damaged by e.g. trauma, surgery, stroke,
CC   ischaemia, infection, metabolic disease, nutritional deficiency,
CC   malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC   disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC   Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC   neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC   disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
```

```
CC   syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC   treat neuropathies associated with systemic disease including post-polio
CC   syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC   Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC   disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC   Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC   such as muscular dystrophy or diseases caused by skeletal or smooth
CC   muscle wasting. The products can also be used for detection, diagnosis,
CC   for the production of transgenic or knockout animals or for drug
CC   screening
XX
SQ   Sequence 696 AA;

  Query Match             100.0%;  Score 277;  DB 2;  Length 696;
  Best Local Similarity   100.0%;  Pred. No. 8.4e-20;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 10
ABG32080
ID   ABG32080 standard; protein; 696 AA.
XX
AC   ABG32080;
XX
DT   05-NOV-2002  (first entry)
XX
DE   Novel human neuregulin related ligand NRG3B2.
XX
KW   Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
KW   epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
KW   ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
KW   lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
KW   neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
KW   epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness;
KW   Meniere's disease; neuropathy; distal sensorimotor neuropathy;
KW   autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
KW   Refsum's disease; Abetalipoproteinaemia; Tangier disease;
KW   Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
KW   Dejerine-Scottas syndrome; human; NRGB2.
XX
OS   Homo sapiens.
XX
PN   US2002082229-A1.
XX
PD   27-JUN-2002.
XX
PF   26-MAR-2001; 2001US-00817647.
XX
PR   24-JUL-1997;   97US-0053641P.
PR   30-JUN-1998;   98US-00107979.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Godowski PJ,  Mark MR,  Zhang D;
XX
DR   WPI; 2002-617760/66.
DR   N-PSDB; ABK90730.
XX
PT   A new neuregulin related ligand designated NRG3 has an epidermal growth
PT   factor-like domain and binds to ErbB4 receptor, and is useful to prevent
PT   or treat NRG3 associated disorders, particularly nerve damage.
XX
PS   Example 1; Fig 4A-B; 60pp; English.
XX
CC   The invention describes a polypeptide comprising an amino acid sequence
CC   encoding an epidermal growth factor (EGF)-like domain, and having the
CC   binding characteristics of neuregulin related ligand (NRG3). NRG3
CC   polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
CC   sample, and also to prevent or treat disorders associated with NRG3 such
CC   as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy
CC   and various conditions involving spinal muscular atrophy or paralysis,
CC   neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC   disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's
CC   syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
CC   sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
CC   such as Charcot-Marie-Tooth disease, Refsum's disease,
CC   Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic
CC   leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
CC   the amino acid sequence of the novel human neuregulin related ligand
CC   NRG3B2
XX
SQ   Sequence 696 AA;

  Query Match             100.0%;  Score 277;  DB 5;  Length 696;
  Best Local Similarity   100.0%;  Pred. No. 8.4e-20;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 11
AAW97617
ID   AAW97617 standard; protein; 713 AA.
XX
AC   AAW97617;
XX
DT   10-MAY-1999  (first entry)
XX
DE   Mouse neuregulin related ligand NRG3.
XX
KW   Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
KW   signal transduction; nervous system disorder; neurodegeneration;
KW   neuropathy; therapy; diagnosis.
XX
OS   Mus sp.
XX
FH   Key             Location/Qualifiers
FT   Domain          1. .362
FT                   /note= "extracellular domain, specifically claimed in
FT                   Claim 5(a)"
FT   Region          66. .91
FT                   /note= "hydrophobic region"
FT   Region          105. .286
FT                   /note= "mucin-like Ser/Thr-rich region, contains sites
FT                   for O-linked glycosylation"
FT   Domain          287. .334
FT                   /note= "EGF-like domain"
FT   Domain          363. .385
FT                   /note= "transmembrane domain"
XX
PN   WO9902681-A1.
XX
PD   21-JAN-1999.
XX
PF   30-JUN-1998;   98WO-US013411.
XX
PR   09-JUL-1997;   97US-0052019P.
PR   24-JUL-1997;   97US-00899437.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Godowski PJ,  Mark MR,  Zhang D;
XX
DR   WPI; 1999-120882/10.
DR   N-PSDB; AAX06987.
XX
PT   New isolated neuregulin related ligand-3 - used to develop products for
PT   treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT   malignancy, Alzheimer's disease or Down's syndrome.
XX
```

PS Claim 5(b); Page 59-62; 101pp; English.
XX
CC This is the amino acid sequence of murine neuregulin related ligand NRG3,
CC a novel member of the epidermal growth factor (EGF)-like family of
CC protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or
CC ErbB3 receptor, and which activates ErbB4 receptor tyrosine
CC phosphorylation. The sequence was deduced from the nucleotide sequences
CC of cDNA clones (see AAX06987) from a mouse brain library. The EGF-like
CC domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays
CC receptor binding characteristics that are distinct from those of other
CC neuregulins. The invention provides human and murine NRG3 polypeptides
CC (see also AAW97618), expression vectors, host cells and methods for the
CC recombinant production of NRG3s. The NRG3 polypeptides and
CC polynucleotides and can be used to enhance the survival, proliferation or
CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC They can be used to prevent or treat damage to a nerve or damage to other
CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC cells. In particular, they can be used to treat diseases which involve
CC neural cell growth such as demyelination, or damage or loss of glial
CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC nervous system has been damaged by e.g. trauma, surgery, stroke,
CC ischaemia, infection, metabolic disease, nutritional deficiency,
CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening
XX
SQ Sequence 713 AA;

Query Match 100.0%; Score 277; DB 2; Length 713;
Best Local Similarity 100.0%; Pred. No. 8.6e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334

RESULT 12
ABG32061
ID ABG32061 standard; protein; 713 AA.
XX
AC ABG32061;
XX
DT 05-NOV-2002 (first entry)
XX
DE Mouse novel neuregulin related ligand NRG3.
XX
KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
KW lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
KW epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness;
KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
KW Refsum's disease; Abetalipoproteinaemia; Tangier disease;
KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
KW Dejerine-Scottas syndrome; mouse.
XX
OS Mus sp.
XX

FH Key Location/Qualifiers
FT Domain 1. .362
FT /label= Extracellular_domain
FT /note= "Specifically claimed in claim 5"
FT Domain 288. .334
FT /label= EGF-like_domain
FT /note= "Extracellular epidermal growth factor-like
FT domain. Specifically claimed in claim 2"
XX
PN US2002082229-A1.
XX
PD 27-JUN-2002.
XX
PF 26-MAR-2001; 2001US-00817647.
XX
PR 24-JUL-1997; 97US-0053641P.
PR 30-JUN-1998; 98US-00107979.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 2002-617760/66.
DR N-PSDB; ABK90728.
XX
PT A new neuregulin related ligand designated NRG3 has an epidermal growth
PT factor-like domain and binds to ErbB4 receptor, and is useful to prevent
PT or treat NRG3 associated disorders, particularly nerve damage.
XX
PS Example 1; Fig 4A-B; 60pp; English.
XX
CC The invention describes a polypeptide comprising an amino acid sequence
CC encoding an epidermal growth factor (EGF)-like domain, and having the
CC binding characteristics of neuregulin related ligand (NRG3). NRG3
CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
CC sample, and also to prevent or treat disorders associated with NRG3 such
CC as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy
CC and various conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's
CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
CC such as Charcot-Marie-Tooth disease, Refsum's disease,
CC Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic
CC leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
CC the amino acid sequence of the novel mouse neuregulin related ligand
CC (NRG3)
XX
SQ Sequence 713 AA;

Query Match 100.0%; Score 277; DB 5; Length 713;
Best Local Similarity 100.0%; Pred. No. 8.6e-20;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334

RESULT 13
AAW97618
ID AAW97618 standard; protein; 720 AA.
XX
AC AAW97618;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3.
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX

```
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          1. .360
FT                   /note= "extracellular domain, specifically claimed in
FT                   Claim 5(a)"
FT   Region          66. .91
FT                   /note= "hydrophobic region"
FT   Region          101. .284
FT                   /note= "mucin-like Ser/Thr-rich region, contains sites
FT                   for O-linked glycosylation"
FT   Domain          285. .354
FT                   /note= "EGF-like domain"
FT   Domain          356. .394
FT                   /note= "transmembrane domain"
XX
PN   WO9902681-A1.
XX
PD   21-JAN-1999.
XX
PF   30-JUN-1998;   98WO-US013411.
XX
PR   09-JUL-1997;   97US-0052019P.
PR   24-JUL-1997;   97US-00899437.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Godowski PJ,  Mark MR,  Zhang D;
XX
DR   WPI; 1999-120882/10.
DR   N-PSDB; AAX06988.
XX
PT   New isolated neuregulin related ligand-3 - used to develop products for
PT   treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT   malignancy, Alzheimer's disease or Down's syndrome.
XX
PS   Claim 5(b); Page 66-69; 101pp; English.
XX
CC   This is the amino acid sequence of human neuregulin related ligand NRG3,
CC   a novel member of the epidermal growth factor (EGF)-like family of
CC   protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or
CC   ErbB3 receptor, and which activates ErbB4 receptor tyrosine
CC   phosphorylation. The sequence was deduced from the nucleotide sequence of
CC   a cDNA clone (see AAX06988) from a foetal brain library. The EGF-like
CC   domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays
CC   receptor binding characteristics that are distinct from those of other
CC   neuregulins. An alternatively spliced form of human NRG3 is provided in
CC   AAW97619. The invention provides human and murine NRG3 polypeptides (see
CC   also AAW97617), expression vectors, host cells and methods for the
CC   recombinant production of NRG3s. The NRG3 polypeptides and
CC   polynucleotides and can be used to enhance the survival, proliferation or
CC   differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC   They can be used to prevent or treat damage to a nerve or damage to other
CC   NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC   cells. In particular, they can be used to treat diseases which involve
CC   neural cell growth such as demyelination, or damage or loss of glial
CC   cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC   nervous system has been damaged by e.g. trauma, surgery, stroke,
CC   ischaemia, infection, metabolic disease, nutritional deficiency,
CC   malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC   disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC   Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC   neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC   disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC   syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC   treat neuropathies associated with systemic disease including post-polio
CC   syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC   Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC   disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC   Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC   such as muscular dystrophy or diseases caused by skeletal or smooth
CC   muscle wasting. The products can also be used for detection, diagnosis,
CC   for the production of transgenic or knockout animals or for drug
CC   screening
XX
SQ   Sequence 720 AA;

  Query Match             100.0%;  Score 277;  DB 2;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 8.7e-20;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 14
AAY05452
ID   AAY05452 standard; protein; 720 AA.
XX
AC   AAY05452;
XX
DT   06-JUL-1999  (first entry)
XX
DE   Human heregulin-like factor sequence.
XX
KW   Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
KW   neural system disorder; cancer.
XX
OS   Homo sapiens.
XX
PN   WO9857989-A1.
XX
PD   23-DEC-1998.
XX
PF   16-JUN-1998;   98WO-US012403.
XX
PR   17-JUN-1997;   97US-0049942P.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
PA   (GEOU ) UNIV GEORGETOWN.
XX
PI   Young P,  Ruben SM,  King CR,  Hijazi MM;
XX
DR   WPI; 1999-095327/08.
XX
PT   New isolated heregulin-like factor - used to develop products for the
PT   diagnosis and treatment of disorders involving regulation of cell growth,
PT   particularly cancers.
XX
PS   Disclosure; Page 97-99; 118pp; English.
XX
CC   This sequence is the human heregulin-like factor (HLF) of the invention.
CC   The HLF is involved in the regulation of cell growth. Detection of
CC   different levels of expression of the HLF gene can be used for the
CC   diagnosis of disorders, e.g. in the neural system. In particular,
CC   detection of different levels of HLF gene expression in cells or body
CC   fluid of an individual can be used for diagnosing cancer. The products
CC   can also be used in the treatment of disorders involving abnormal levels
CC   of HLF activity
XX
SQ   Sequence 720 AA;

  Query Match             100.0%;  Score 277;  DB 2;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 8.7e-20;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 15
ABG32065
ID   ABG32065 standard; protein; 720 AA.
XX
```

```
AC   ABG32065;
XX
DT   05-NOV-2002  (first entry)
XX
DE   Human novel neuregulin related ligand NRG3B1.
XX
KW   Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
KW   epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
KW   ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
KW   lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
KW   neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
KW   epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness;
KW   Meniere's disease; neuropathy; distal sensorimotor neuropathy;
KW   autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
KW   Refsum's disease; Abetalipoproteinaemia; Tangier disease;
KW   Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
KW   Dejerine-Scottas syndrome; human; gene; ss; NRG3B1.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          1. .360
FT                   /label= Extracellular_domain
FT                   /note= "Specifically claimed in claim 5"
FT   Domain          286. .332
FT                   /label= EGF-like_domain
FT                   /note= "Extracellular epidermal growth factor-like
FT                   domain"
XX
PN   US2002082229-A1.
XX
PD   27-JUN-2002.
XX
PF   26-MAR-2001; 2001US-00817647.
XX
PR   24-JUL-1997;   97US-0053641P.
PR   30-JUN-1998;   98US-00107979.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Godowski PJ,  Mark MR,  Zhang D;
XX
DR   WPI; 2002-617760/66.
DR   N-PSDB; ABK90731.
XX
PT   A new neuregulin related ligand designated NRG3 has an epidermal growth
PT   factor-like domain and binds to ErbB4 receptor, and is useful to prevent
PT   or treat NRG3 associated disorders, particularly nerve damage.
XX
PS   Example 1; Fig 4A-B; 60pp; English.
XX
CC   The invention describes a polypeptide comprising an amino acid sequence
CC   encoding an epidermal growth factor (EGF)-like domain, and having the
CC   binding characteristics of neuregulin related ligand (NRG3). NRG3
CC   polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
CC   sample, and also to prevent or treat disorders associated with NRG3 such
CC   as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy
CC   and various conditions involving spinal muscular atrophy or paralysis,
CC   neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC   disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's
CC   syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
CC   sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
CC   such as Charcot-Marie-Tooth disease, Refsum's disease,
CC   Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic
CC   leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
CC   the amino acid sequence of the novel human neuregulin related ligand
CC   (NRG3B1)
XX
SQ   Sequence 720 AA;

  Query Match            100.0%;  Score 277;  DB 5;  Length 720;
  Best Local Similarity  100.0%;  Pred. No. 8.7e-20;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332

Search completed: November  2, 2004, 13:24:19
Job time : 159 secs
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GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:28:26 ; Search time 156 Seconds
(without alignments)
108.079 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 47
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 2002273 seqs, 358729299 residues

Word size : 0

Total number of hits satisfying chosen parameters: 2002273

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : A_Geneseq_23Sep04:*
1: geneseqp1980s:*
2: geneseqp1990s:*
3: geneseqp2000s:*
4: geneseqp2001s:*
5: geneseqp2002s:*
6: geneseqp2003as:*
7: geneseqp2003bs:*
8: geneseqp2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	47	100.0	47	2	AAW97622	Aaw97622 Human neu
2	47	100.0	48	5	AAG66046	Aag66046 Mouse NRG
3	47	100.0	52	6	AAE36807	Aae36807 Human neu
4	47	100.0	157	2	AAY05451	Aay05451 Human her
5	47	100.0	157	8	ADN48870	Adn48870 Human her
6	47	100.0	360	2	AAW97621	Aaw97621 Human neu
7	47	100.0	362	2	AAW97620	Aaw97620 Mouse neu
8	47	100.0	502	5	ABB08776	Abb08776 Human neu
9	47	100.0	696	2	AAW97619	Aaw97619 Human neu
10	47	100.0	696	5	ABG32080	Abg32080 Novel hum
11	47	100.0	713	2	AAW97617	Aaw97617 Mouse neu
12	47	100.0	713	5	ABG32061	Abg32061 Mouse nov
13	47	100.0	720	2	AAW97618	Aaw97618 Human neu
14	47	100.0	720	2	AAY05452	Aay05452 Human her
15	47	100.0	720	5	ABG32065	Abg32065 Human nov
16	47	100.0	720	8	ADN48890	Adn48890 Human her
17	8	17.0	8	2	AAW97623	Aaw97623 Neureguli
18	8	17.0	8	5	ABG32078	Abg32078 Human neu
19	7	14.9	87	4	AAO06698	Aao06698 Human pol
20	7	14.9	156	3	AAG37655	Aag37655 Arabidops
21	7	14.9	168	3	AAG34461	Aag34461 Arabidops
22	7	14.9	204	8	ADH71124	Adh71124 Human pro
23	7	14.9	204	8	ADH71122	Adh71122 Human pro
24	7	14.9	207	3	AAG37654	Aag37654 Arabidops
25	7	14.9	219	3	AAG34460	Aag34460 Arabidops
26	7	14.9	237	3	AAG37653	Aag37653 Arabidops
27	7	14.9	250	3	AAG34459	Aag34459 Arabidops
28	7	14.9	349	3	AAG05216	Aag05216 Arabidops
29	7	14.9	349	3	AAG39240	Aag39240 Arabidops
30	7	14.9	349	7	ABM73948	Abm73948 DNA clone
31	7	14.9	357	3	AAG39239	Aag39239 Arabidops
32	7	14.9	357	3	AAG36778	Aag36778 Arabidops
33	7	14.9	357	3	AAG05215	Aag05215 Arabidops
34	7	14.9	377	7	ABM73802	Abm73802 DNA clone
35	7	14.9	401	5	ABG93885	Abg93885 Wheat ami
36	7	14.9	401	7	ADF66727	Adf66727 Wheat ami
37	7	14.9	407	5	ABG93884	Abg93884 Soybean a
38	7	14.9	407	7	ADF66725	Adf66725 Soybean a
39	7	14.9	408	3	AAG05214	Aag05214 Arabidops
40	7	14.9	408	3	AAG36777	Aag36777 Arabidops
41	7	14.9	408	3	AAG39238	Aag39238 Arabidops
42	7	14.9	450	6	ABO01340	Abo01340 Human pro
43	7	14.9	450	8	ADN96052	Adn96052 Human NOV
44	7	14.9	452	3	AAG36776	Aag36776 Arabidops
45	7	14.9	471	8	ADM74187	Adm74187 Human NOV

ALIGNMENTS

RESULT 1
AAW97622
ID AAW97622 standard; protein; 47 AA.
XX
AC AAW97622;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 EGF-like domain.
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis; epidermal growth factor; EGF;
KW immunoadhesin.
XX
OS Homo sapiens.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX
PS Claim 30; Page 64; 101pp; English.
XX
CC This is the epidermal growth factor (EGF)-like domain of human neuregulin
CC related ligand NRG3 (see also AAW97618), a novel member of the EGF-like
CC family of protein ligands that binds to the ErbB4 receptor and activates
CC ErbB4 receptor tyrosine phosphorylation. The EGF-1 like domain of NRG3 is
CC distinct from the EGF-like domains of NRG1 and NRH2. The invention
CC provides human and murine polypeptides (see also AAW97617) that have at
CC least 75% homology to the NRG3 EGF-like domain, as well as expression
CC vectors, host cells and methods for the recombinant production of novel
CC NRG3s. The NRG3 polypeptides and polynucleotides and can be used to
CC enhance the survival, proliferation or differentiation of cells having

CC the ErbB4 receptor in vivo and in vitro. They can be used to prevent or
CC treat damage to a nerve or damage to other NRG3-expressing or NRG3-
CC responsive cells, e.g. brain, heart, or kidney cells. In particular, they
CC can be used to treat diseases which involve neural cell growth such as
CC demyelination, or damage or loss of glial cells (e.g. multiple
CC sclerosis). They can be used to treat patients whose nervous system has
CC been damaged by e.g. trauma, surgery, stroke, ischaemia, infection,
CC metabolic disease, nutritional deficiency, malignancy, or toxic agents.
CC NRG3 can also be used to treat motor neuron disorders such as amyotrophic
CC lateral sclerosis (Lou Gehrig's disease), Bell's palsy, conditions
CC involving spinal muscular atrophy or paralysis, neurodegenerative
CC disorders such as Alzheimer's disease, Parkinson's disease, epilepsy,
CC multiple sclerosis, Huntington's chorea, Down's syndrome, nerve deafness,
CC and Meniere's disease. They can also be used to treat neuropathies
CC associated with systemic disease including post-polio syndrome,
CC hereditary neuropathies including Charcot-Marie-Tooth disease, Refsum's
CC disease, abetalipoproteinemia, Tangier disease, Krabbe's disease,
CC metachromatic leukodystrophy, Fabry's disease and Dejerine-Sottas
CC syndrome, to treat disease of skeletal muscle of smooth muscle, such as
CC muscular dystrophy or diseases caused by skeletal or smooth muscle
CC wasting. The products can also be used for detection, diagnosis, for the
CC production of transgenic or knockout animals or for drug screening. A
CC claimed immunoadhesin comprises the human NRG3 EGF-like domain fused to
CC an immunoglobulin sequence
XX
SQ Sequence 47 AA;

Query Match 100.0%; Score 47; DB 2; Length 47;
Best Local Similarity 100.0%; Pred. No. 3.5e-41;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47

RESULT 2
AAG66046
ID AAG66046 standard; peptide; 48 AA.
XX
AC AAG66046;
XX
DT 27-FEB-2002 (first entry)
XX
DE Mouse NRG-3 EGF-like motif sequence.
XX
KW ErbB-4; neuregulin-4; NRG-4; pro-NRG-4; neuroprotective; vulnerary;
KW cerebroprotective; vasotropic; antiparkinsonian; anticonvulsant;
KW cytostatic; nootropic; EGF; NRG-3.
XX
OS Mus musculus.
XX
PN WO200181540-A2.
XX
PD 01-NOV-2001.
XX
PF 20-APR-2001; 2001WO-IL000371.
XX
PR 21-APR-2000; 2000US-00553769.
XX
PA (YEDA) YEDA RES & DEV CO LTD.
XX
PI Harari D, Yarden Y;
XX
DR WPI; 2002-041398/05.
XX
PT Novel ErbB-4 ligand, referred as neuregulin (NRG)-4 and polynucleotide
PT sequences encoding NRG-4, useful for upregulating or downregulating ErbB-
PT 4 receptor activity to treat Alzheimer's disease, stroke, gastric cancer.
XX
PS Disclosure; Fig 1c; 153pp; English.
XX
CC The invention relates to a novel ErbB-4 ligand, neuregulin-4 (NRG-4). NRG
CC -4 binds to mammalian ErbB-4 receptor and can be expressed by standard
CC recombinant methodology. Pharmaceutical compositions comprising NRG-4 are
CC useful for regulating an endogenous protein affecting ErbB-4 receptor
CC activity in vivo. They are also useful for treating or preventing a
CC disease condition or syndrome associated with disregulation of an
CC endogenous protein affecting ErbB-4 receptor activity, e.g., amyotrophic
CC lateral sclerosis (Lou Gehrig's disease), Bell's palsy, spinal muscular
CC atrophy, brain trauma, stroke, ischemia, Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, neuropathy, muscular dystrophy, extramammary
CC Paget's disease, gastric, pancreatic, prostate, breast and ovarian
CC cancer, cervical carcinoma, endometrial adenocarcinoma, pancreatic D
CC cells-somatostatinoma and Zollinger-Ellison syndrome. The agent comprised
CC in the pharmaceutical composition includes a polypeptide (e.g., a soluble
CC ligand binding domain of ErbB-4 i.e., IgB4; or a monoclonal, polyclonal,
CC humanized, single chain antibody or an immunoreactive derivative of an
CC antibody) capable of binding the endogenous protein affecting ErbB-4
CC receptor activity. Traceable synthetic/recombinant NRG-4-tagged molecules
CC can serve as a diagnostic tool in which cells binding NRG-4 can be
CC measured. Sequences AAG66044-53 represent the EGF-like motifs of various
CC growth factors
XX
SQ Sequence 48 AA;

Query Match 100.0%; Score 47; DB 5; Length 48;
Best Local Similarity 100.0%; Pred. No. 3.6e-41;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 2 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 48

RESULT 3
AAE36807
ID AAE36807 standard; protein; 52 AA.
XX
AC AAE36807;
XX
DT 07-AUG-2003 (first entry)
XX
DE Human neuregulin 3 EGF-like domain.
XX
KW Epidermal growth factor receptor; EGFR; therapy; psoriasis; carcinoma;
KW cancer; rhabdomyosarcoma; mesothelioma; melanoma; glioblastoma; human;
KW receptor; EGF; neuregulin 3.
XX
OS Homo sapiens.
XX
PN WO2003014159-A1.
XX
PD 20-FEB-2003.
XX
PF 05-AUG-2002; 2002WO-AU001042.
XX
PR 03-AUG-2001; 2001AU-00006827.
PR 03-AUG-2001; 2001AU-00006828.
PR 01-NOV-2001; 2001US-0335393P.
PR 01-NOV-2001; 2001US-0336560P.
PR 31-MAY-2002; 2002AU-00002731.
PR 11-JUN-2002; 2002US-0388171P.
XX
PA (CSIR) COMMONWEALTH SCI & IND RES ORG.
PA (BIOM-) BIOMOLECULAR RES INST LTD.
PA (HALL-) HALL INST MEDICAL RES WALTER & ELIZA.
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Adams TE, Burgess AW, Elleman TC, Garrett TPJ, Jorissen RN;
PI Lou M, Lovrecz GO, Mckern NM, Nice EC, Ward CW;
XX
DR WPI; 2003-268181/26.
XX
PT Selecting or designing compounds that interact with or inhibit formation

PT of active dimers of the EGF receptor family, and useful for the
PT prevention and treatment of disorders, such as psoriasis and cancer of
PT the breast, brain or colon.
XX
PS Disclosure; Fig 2; 354pp; English.
XX
CC The invention relates to a method of selecting or designing a compound
CC that interacts with or inhibits the formation of active dimers of a
CC receptor of the epidermal growth factor receptor (EGFR) family. The
CC methods and compositions of the invention are useful for the prevention
CC and treatment of disorders associated with signalling by a molecule of
CC the EGFR family such as psoriasis and cancer of the pancreas, breast,
CC brain, colon, prostate, ovary, cervix, lung, head and neck, melanoma,
CC rhabdomyosarcoma, mesothelioma, squamous carcinomas of the skin and
CC glioblastomas. The present sequence is epidermal growth factor (EGF) like
CC domain of human neuregulin 3 protein. This sequence is used to illustrate
CC the method of the invention
XX
SQ Sequence 52 AA;

Query Match 100.0%; Score 47; DB 6; Length 52;
Best Local Similarity 100.0%; Pred. No. 3.9e-41;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 2 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 48

RESULT 4
AAY05451
ID AAY05451 standard; protein; 157 AA.
XX
AC AAY05451;
XX
DT 06-JUL-1999 (first entry)
XX
DE Human heregulin-like factor sequence.
XX
KW Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
KW neural system disorder; cancer.
XX
OS Homo sapiens.
XX
PN WO9857989-A1.
XX
PD 23-DEC-1998.
XX
PF 16-JUN-1998; 98WO-US012403.
XX
PR 17-JUN-1997; 97US-0049942P.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
PA (GEOU) UNIV GEORGETOWN.
XX
PI Young P, Ruben SM, King CR, Hijazi MM;
XX
DR WPI; 1999-095327/08.
DR N-PSDB; AAX36423.
XX
PT New isolated heregulin-like factor - used to develop products for the
PT diagnosis and treatment of disorders involving regulation of cell growth,
PT particularly cancers.
XX
PS Claim 17; Page 86-87; 118pp; English.
XX
CC This sequence is the human heregulin-like factor (HLF) of the invention.
CC The HLF is involved in the regulation of cell growth. Detection of
CC different levels of expression of the HLF gene can be used for the
CC diagnosis of disorders, e.g. in the neural system. In particular,
CC detection of different levels of HLF gene expression in cells or body
CC fluid of an individual can be used for diagnosing cancer. The products
CC can also be used in the treatment of disorders involving abnormal levels
CC of HLF activity
XX
SQ Sequence 157 AA;

Query Match 100.0%; Score 47; DB 2; Length 157;
Best Local Similarity 100.0%; Pred. No. 1e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77

RESULT 5
ADN48870
ID ADN48870 standard; protein; 157 AA.
XX
AC ADN48870;
XX
DT 15-JUL-2004 (first entry)
XX
DE Human heregulin-like factor (HLF) protein.
XX
KW HLF; heregulin-like factor; diagnosis; cancer; gene therapy; human.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Domain 26. .93
FT /note = EGF domain
XX
PN US6727077-B1.
XX
PD 27-APR-2004.
XX
PF 16-JUN-1998; 98US-00097681.
XX
PR 17-JUN-1997; 97US-0049492P.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
PA (GEOU) UNIV GEORGETOWN MEDICAL CENT.
XX
PI Young PE, King CR, Hijazi M, Ruben SM;
XX
DR WPI; 2004-338520/31.
DR N-PSDB; ADN48869.
XX
PT New heregulin-like factor (HLF) nucleic acid or polypeptide, useful for
PT preparing a composition for diagnosing or treating cancer.
XX
PS Claim 1; SEQ ID NO 2; 48pp; English.
XX
CC The present invention relates to novel heregulin-like factor (HLF)
CC polypeptides and the encoding polynucleotides. The invention is useful
CC for preparing a composition for diagnosing and treating cancer. The
CC invention is also useful in gene therapy. The present sequence is human
CC heregulin-like factor (HLF) protein.
XX
SQ Sequence 157 AA;

Query Match 100.0%; Score 47; DB 8; Length 157;
Best Local Similarity 100.0%; Pred. No. 1e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77

RESULT 6
AAW97621
ID AAW97621 standard; protein; 360 AA.
XX

AC AAW97621;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3 extracellular domain.
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX
OS Homo sapiens.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX
PS Claim 5(a); Page 69-70; 101pp; English.
XX
CC This is the extracellular domain (ECD, aa1-360 of human neuregulin
CC related ligand NRG3 (see also AAW97618), a novel member of the epidermal
CC growth factor (EGF)-like family of protein ligands. NRG3 binds to the
CC ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4
CC receptor tyrosine phosphorylation. The invention provides human and
CC murine polypeptides (see also AAW97617) that have at least 75% homology
CC to the NRG3 ECD, as well as expression vectors, host cells and methods
CC for the recombinant production of novel NRG3s. The NRG3 polypeptides and
CC polynucleotides and can be used to enhance the survival, proliferation or
CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC They can be used to prevent or treat damage to a nerve or damage to other
CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC cells. In particular, they can be used to treat diseases which involve
CC neural cell growth such as demyelination, or damage or loss of glial
CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC nervous system has been damaged by e.g. trauma, surgery, stroke,
CC ischaemia, infection, metabolic disease, nutritional deficiency,
CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening
XX
SQ Sequence 360 AA;

Query Match 100.0%; Score 47; DB 2; Length 360;
Best Local Similarity 100.0%; Pred. No. 2.1e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332

RESULT 7
AAW97620
ID AAW97620 standard; protein; 362 AA.
XX
AC AAW97620;
XX
DT 10-MAY-1999 (first entry)
XX
DE Mouse neuregulin related ligand NRG3 extracellular domain.
XX
KW Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX
OS Mus sp.
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX
PS Claim 5(a); Page 62-63; 101pp; English.
XX
CC This is the extracellular domain (ECD, aa1-362) of murine neuregulin
CC related ligand NRG3 (see also AAW97617), a novel member of the epidermal
CC growth factor (EGF)-like family of protein ligands. NRG3 binds to the
CC ErbB4 receptor, but not to the ErbB2 or ErbB3 receptor, activates ErbB4
CC receptor tyrosine phosphorylation. The invention provides human and
CC murine polypeptides (see also AAW97618) that have at least 75% homology
CC to the NRG3 ECD, as well as expression vectors, host cells and methods
CC for the recombinant production of novel NRG3s. The NRG3 polypeptides and
CC polynucleotides and can be used to enhance the survival, proliferation or
CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC They can be used to prevent or treat damage to a nerve or damage to other
CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC cells. In particular, they can be used to treat diseases which involve
CC neural cell growth such as demyelination, or damage or loss of glial
CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC nervous system has been damaged by e.g. trauma, surgery, stroke,
CC ischaemia, infection, metabolic disease, nutritional deficiency,
CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening

```
XX
SQ   Sequence 362 AA;

  Query Match             100.0%;  Score 47;  DB 2;  Length 362;
  Best Local Similarity   100.0%;  Pred. No. 2.1e-40;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 8
ABB08776
ID   ABB08776 standard; protein; 502 AA.
XX
AC   ABB08776;
XX
DT   16-MAY-2002  (first entry)
XX
DE   Human neuregulin 55 SEQ ID NO 2.
XX
KW   Human; neuregulin 55; nervous system; development; neuropsychopathy;
KW   tumour; inflammation; immunological disease.
XX
OS   Homo sapiens.
XX
PN   CN1324826-A.
XX
PD   05-DEC-2001.
XX
PF   19-MAY-2000; 2000CN-00115761.
XX
PR   19-MAY-2000; 2000CN-00115761.
XX
PA   (BODE-) BODE GENE DEV CO LTD SHANGHAI.
XX
PI   Mao Y,  Xie Y;
XX
DR   WPI; 2002-217507/28.
DR   N-PSDB; ABL41244.
XX
PT   New polypeptide human neuregulin 55 and polynucleotides for encoding
PT   same.
XX
PS   Claim 1; Page 27-28 (Disclosure); 35pp; Chinese.
XX
CC   The invention relates to human neuregulin 55, polynucleotide for coding
CC   this polypeptide and a method for producing this polypeptide by using DNA
CC   recombination technique. The invention also discloses the method for
CC   curing several diseases, such as nervous system developmental diseases,
CC   neuropsychopathy, other nervous system diseases, development disturbance,
CC   tumours, inflammations and immunological disease by using said
CC   polypeptide. The invention also discloses an antagonist for resisting
CC   said polypeptide and its therapeutic action and also discloses the
CC   application of polynucleotide to coding this novel human neuregulin 55.
CC   The present sequence is that of human neuregulin 55
XX
SQ   Sequence 502 AA;

  Query Match             100.0%;  Score 47;  DB 5;  Length 502;
  Best Local Similarity   100.0%;  Pred. No. 2.8e-40;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db         92 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 138


RESULT 9
AAW97619
ID   AAW97619 standard; protein; 696 AA.
XX
AC   AAW97619;
XX
DT   10-MAY-1999  (first entry)
XX
DE   Human neuregulin related ligand NRG3 (splice variant).
XX
KW   Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW   signal transduction; nervous system disorder; neurodegeneration;
KW   neuropathy; therapy; diagnosis; splice variant.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          1. .360
FT                   /note= "extracellular domain, specifically claimed in
FT                   Claim 5(a)"
FT   Region          66. .91
FT                   /note= "hydrophobic region"
FT   Region          101. .284
FT                   /note= "mucin-like Ser/Thr-rich region, contains sites
FT                   for O-linked glycosylation"
FT   Domain          285. .354
FT                   /note= "EGF-like domain"
FT   Domain          356. .394
FT                   /note= "transmembrane domain"
XX
PN   WO9902681-A1.
XX
PD   21-JAN-1999.
XX
PF   30-JUN-1998;   98WO-US013411.
XX
PR   09-JUL-1997;   97US-0052019P.
PR   24-JUL-1997;   97US-00899437.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Godowski PJ,  Mark MR,  Zhang D;
XX
DR   WPI; 1999-120882/10.
DR   N-PSDB; AAX06989.
XX
PT   New isolated neuregulin related ligand-3 - used to develop products for
PT   treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT   malignancy, Alzheimer's disease or Down's syndrome.
XX
PS   Example 1; Page 78-81; 101pp; English.
XX
CC   This is the amino acid sequence of splice variant hNGR3B2 of human
CC   neuregulin related ligand NRG3, a novel member of the epidermal growth
CC   factor (EGF)-like family of protein ligands that binds to the ErbB4
CC   receptor, but not to the ErbB2 or ErbB3 receptor, and which activates
CC   ErbB4 receptor tyrosine phosphorylation. The sequence was deduced from
CC   the nucleotide sequence of a cDNA clone (see AAX06989) from a foetal
CC   brain library. hNGR3B2 lacks amino acids 529-552 of hNGR3B1 (see
CC   AAW97618) but retains the EGF- like domain and is expected to exhibit
CC   biological activity. The invention provides human and murine NRG3
CC   polypeptides (see AAW97617), expression vectors, host cells and methods
CC   for the recombinant production of NRG3s. The NRG3 polypeptides and
CC   polynucleotides and can be used to enhance the survival, proliferation or
CC   differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC   They can be used to prevent or treat damage to a nerve or damage to other
CC   NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC   cells. In particular, they can be used to treat diseases which involve
CC   neural cell growth such as demyelination, or damage or loss of glial
CC   cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC   nervous system has been damaged by e.g. trauma, surgery, stroke,
CC   ischaemia, infection, metabolic disease, nutritional deficiency,
CC   malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC   disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC   Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC   neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC   disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
```

CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening
XX
SQ Sequence 696 AA;

Query Match 100.0%; Score 47; DB 2; Length 696;
Best Local Similarity 100.0%; Pred. No. 3.7e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332

RESULT 10
ABG32080
ID ABG32080 standard; protein; 696 AA.
XX
AC ABG32080;
XX
DT 05-NOV-2002 (first entry)
XX
DE Novel human neuregulin related ligand NRG3B2.
XX
KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
KW lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
KW epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness;
KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
KW Refsum's disease; Abetalipoproteinaemia; Tangier disease;
KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
KW Dejerine-Scottas syndrome; human; NRGB2.
XX
OS Homo sapiens.
XX
PN US2002082229-A1.
XX
PD 27-JUN-2002.
XX
PF 26-MAR-2001; 2001US-00817647.
XX
PR 24-JUL-1997; 97US-0053641P.
PR 30-JUN-1998; 98US-00107979.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 2002-617760/66.
DR N-PSDB; ABK90730.
XX
PT A new neuregulin related ligand designated NRG3 has an epidermal growth
PT factor-like domain and binds to ErbB4 receptor, and is useful to prevent
PT or treat NRG3 associated disorders, particularly nerve damage.
XX
PS Example 1; Fig 4A-B; 60pp; English.
XX
CC The invention describes a polypeptide comprising an amino acid sequence
CC encoding an epidermal growth factor (EGF)-like domain, and having the
CC binding characteristics of neuregulin related ligand (NRG3). NRG3
CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
CC sample, and also to prevent or treat disorders associated with NRG3 such
CC as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy
CC and various conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's
CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
CC such as Charcot-Marie-Tooth disease, Refsum's disease,
CC Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic
CC leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
CC the amino acid sequence of the novel human neuregulin related ligand
CC NRG3B2
XX
SQ Sequence 696 AA;

Query Match 100.0%; Score 47; DB 5; Length 696;
Best Local Similarity 100.0%; Pred. No. 3.7e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332

RESULT 11
AAW97617
ID AAW97617 standard; protein; 713 AA.
XX
AC AAW97617;
XX
DT 10-MAY-1999 (first entry)
XX
DE Mouse neuregulin related ligand NRG3.
XX
KW Neuregulin related ligand; NRG3; mouse; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX
OS Mus sp.
XX
FH Key Location/Qualifiers
FT Domain 1. .362
FT /note= "extracellular domain, specifically claimed in
FT Claim 5(a)"
FT Region 66. .91
FT /note= "hydrophobic region"
FT Region 105. .286
FT /note= "mucin-like Ser/Thr-rich region, contains sites
FT for O-linked glycosylation"
FT Domain 287. .334
FT /note= "EGF-like domain"
FT Domain 363. .385
FT /note= "transmembrane domain"
XX
PN WO9902681-A1.
XX
PD 21-JAN-1999.
XX
PF 30-JUN-1998; 98WO-US013411.
XX
PR 09-JUL-1997; 97US-0052019P.
PR 24-JUL-1997; 97US-00899437.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 1999-120882/10.
DR N-PSDB; AAX06987.
XX
PT New isolated neuregulin related ligand-3 - used to develop products for
PT treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT malignancy, Alzheimer's disease or Down's syndrome.
XX

PS Claim 5(b); Page 59-62; 101pp; English.
XX
CC This is the amino acid sequence of murine neuregulin related ligand NRG3,
CC a novel member of the epidermal growth factor (EGF)-like family of
CC protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or
CC ErbB3 receptor, and which activates ErbB4 receptor tyrosine
CC phosphorylation. The sequence was deduced from the nucleotide sequences
CC of cDNA clones (see AAX06987) from a mouse brain library. The EGF-like
CC domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays
CC receptor binding characteristics that are distinct from those of other
CC neuregulins. The invention provides human and murine NRG3 polypeptides
CC (see also AAW97618), expression vectors, host cells and methods for the
CC recombinant production of NRG3s. The NRG3 polypeptides and
CC polynucleotides and can be used to enhance the survival, proliferation or
CC differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC They can be used to prevent or treat damage to a nerve or damage to other
CC NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC cells. In particular, they can be used to treat diseases which involve
CC neural cell growth such as demyelination, or damage or loss of glial
CC cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC nervous system has been damaged by e.g. trauma, surgery, stroke,
CC ischaemia, infection, metabolic disease, nutritional deficiency,
CC malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC treat neuropathies associated with systemic disease including post-polio
CC syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC such as muscular dystrophy or diseases caused by skeletal or smooth
CC muscle wasting. The products can also be used for detection, diagnosis,
CC for the production of transgenic or knockout animals or for drug
CC screening
XX
SQ Sequence 713 AA;

```
  Query Match             100.0%;  Score 47;  DB 2;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-40;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334
```

RESULT 12
ABG32061
ID ABG32061 standard; protein; 713 AA.
XX
AC ABG32061;
XX
DT 05-NOV-2002 (first entry)
XX
DE Mouse novel neuregulin related ligand NRG3.
XX
KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
KW lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
KW epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness;
KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
KW Refsum's disease; Abetalipoproteinaemia; Tangier disease;
KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
KW Dejerine-Scottas syndrome; mouse.
XX
OS Mus sp.
XX

FH Key Location/Qualifiers
FT Domain 1. .362
FT /label= Extracellular_domain
FT /note= "Specifically claimed in claim 5"
FT Domain 288. .334
FT /label= EGF-like_domain
FT /note= "Extracellular epidermal growth factor-like
FT domain. Specifically claimed in claim 2"
XX
PN US2002082229-A1.
XX
PD 27-JUN-2002.
XX
PF 26-MAR-2001; 2001US-00817647.
XX
PR 24-JUL-1997; 97US-0053641P.
PR 30-JUN-1998; 98US-00107979.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 2002-617760/66.
DR N-PSDB; ABK90728.
XX
PT A new neuregulin related ligand designated NRG3 has an epidermal growth
PT factor-like domain and binds to ErbB4 receptor, and is useful to prevent
PT or treat NRG3 associated disorders, particularly nerve damage.
XX
PS Example 1; Fig 4A-B; 60pp; English.
XX
CC The invention describes a polypeptide comprising an amino acid sequence
CC encoding an epidermal growth factor (EGF)-like domain, and having the
CC binding characteristics of neuregulin related ligand (NRG3). NRG3
CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
CC sample, and also to prevent or treat disorders associated with NRG3 such
CC as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy
CC and various conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's
CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
CC such as Charcot-Marie-Tooth disease, Refsum's disease,
CC Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic
CC leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
CC the amino acid sequence of the novel mouse neuregulin related ligand
CC (NRG3)
XX
SQ Sequence 713 AA;

```
  Query Match             100.0%;  Score 47;  DB 5;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-40;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334
```

RESULT 13
AAW97618
ID AAW97618 standard; protein; 720 AA.
XX
AC AAW97618;
XX
DT 10-MAY-1999 (first entry)
XX
DE Human neuregulin related ligand NRG3.
XX
KW Neuregulin related ligand; NRG3; hNRG3B1; human; ErbB4 receptor;
KW signal transduction; nervous system disorder; neurodegeneration;
KW neuropathy; therapy; diagnosis.
XX

```
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Domain          1. .360
FT                   /note= "extracellular domain, specifically claimed in
FT                   Claim 5(a)"
FT   Region          66. .91
FT                   /note= "hydrophobic region"
FT   Region          101. .284
FT                   /note= "mucin-like Ser/Thr-rich region, contains sites
FT                   for O-linked glycosylation"
FT   Domain          285. .354
FT                   /note= "EGF-like domain"
FT   Domain          356. .394
FT                   /note= "transmembrane domain"
XX
PN   WO9902681-A1.
XX
PD   21-JAN-1999.
XX
PF   30-JUN-1998;   98WO-US013411.
XX
PR   09-JUL-1997;   97US-0052019P.
PR   24-JUL-1997;   97US-00899437.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Godowski PJ,  Mark MR,  Zhang D;
XX
DR   WPI; 1999-120882/10.
DR   N-PSDB; AAX06988.
XX
PT   New isolated neuregulin related ligand-3 - used to develop products for
PT   treating nervous system disorders, e.g. stroke, ischaemia, infection,
PT   malignancy, Alzheimer's disease or Down's syndrome.
XX
PS   Claim 5(b); Page 66-69; 101pp; English.
XX
CC   This is the amino acid sequence of human neuregulin related ligand NRG3,
CC   a novel member of the epidermal growth factor (EGF)-like family of
CC   protein ligands that binds to the ErbB4 receptor, but not to the ErbB2 or
CC   ErbB3 receptor, and which activates ErbB4 receptor tyrosine
CC   phosphorylation. The sequence was deduced from the nucleotide sequence of
CC   a cDNA clone (see AAX06988) from a foetal brain library. The EGF-like
CC   domain of NRG3 is distinct from those of NRG1 or NRG2, and NRG3 displays
CC   receptor binding characteristics that are distinct from those of other
CC   neuregulins. An alternatively spliced form of human NRG3 is provided in
CC   AAW97619. The invention provides human and murine NRG3 polypeptides (see
CC   also AAW97617), expression vectors, host cells and methods for the
CC   recombinant production of NRG3s. The NRG3 polypeptides and
CC   polynucleotides and can be used to enhance the survival, proliferation or
CC   differentiation of cells having the ErbB4 receptor in vivo and in vitro.
CC   They can be used to prevent or treat damage to a nerve or damage to other
CC   NRG3-expressing or NRG3-responsive cells, e.g. brain, heart, or kidney
CC   cells. In particular, they can be used to treat diseases which involve
CC   neural cell growth such as demyelination, or damage or loss of glial
CC   cells (e.g. multiple sclerosis). They can be used to treat patients whose
CC   nervous system has been damaged by e.g. trauma, surgery, stroke,
CC   ischaemia, infection, metabolic disease, nutritional deficiency,
CC   malignancy, or toxic agents. NRG3 can also be used to treat motor neuron
CC   disorders such as amyotrophic lateral sclerosis (Lou Gehrig's disease),
CC   Bell's palsy, conditions involving spinal muscular atrophy or paralysis,
CC   neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC   disease, epilepsy, multiple sclerosis, Huntington's chorea, Down's
CC   syndrome, nerve deafness, and Meniere's disease. They can also be used to
CC   treat neuropathies associated with systemic disease including post-polio
CC   syndrome, hereditary neuropathies including Charcot-Marie-Tooth disease,
CC   Refsum's disease, abetalipoproteinemia, Tangier disease, Krabbe's
CC   disease, metachromatic leukodystrophy, Fabry's disease and Dejerine-
CC   Sottas syndrome, to treat disease of skeletal muscle of smooth muscle,
CC   such as muscular dystrophy or diseases caused by skeletal or smooth
CC   muscle wasting. The products can also be used for detection, diagnosis,
CC   for the production of transgenic or knockout animals or for drug
CC   screening
XX
SQ   Sequence 720 AA;

  Query Match             100.0%;  Score 47;  DB 2;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-40;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 14
AAY05452
ID   AAY05452 standard; protein; 720 AA.
XX
AC   AAY05452;
XX
DT   06-JUL-1999  (first entry)
XX
DE   Human heregulin-like factor sequence.
XX
KW   Human heregulin-like factor; HLF; cell growth regulator; diagnosis;
KW   neural system disorder; cancer.
XX
OS   Homo sapiens.
XX
PN   WO9857989-A1.
XX
PD   23-DEC-1998.
XX
PF   16-JUN-1998;   98WO-US012403.
XX
PR   17-JUN-1997;   97US-0049942P.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
PA   (GEOU ) UNIV GEORGETOWN.
XX
PI   Young P,  Ruben SM,  King CR,  Hijazi MM;
XX
DR   WPI; 1999-095327/08.
XX
PT   New isolated heregulin-like factor - used to develop products for the
PT   diagnosis and treatment of disorders involving regulation of cell growth,
PT   particularly cancers.
XX
PS   Disclosure; Page 97-99; 118pp; English.
XX
CC   This sequence is the human heregulin-like factor (HLF) of the invention.
CC   The HLF is involved in the regulation of cell growth. Detection of
CC   different levels of expression of the HLF gene can be used for the
CC   diagnosis of disorders, e.g. in the neural system. In particular,
CC   detection of different levels of HLF gene expression in cells or body
CC   fluid of an individual can be used for diagnosing cancer. The products
CC   can also be used in the treatment of disorders involving abnormal levels
CC   of HLF activity
XX
SQ   Sequence 720 AA;

  Query Match             100.0%;  Score 47;  DB 2;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 3.8e-40;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 15
ABG32065
ID   ABG32065 standard; protein; 720 AA.
XX
```

AC ABG32065;
XX
DT 05-NOV-2002 (first entry)
XX
DE Human novel neuregulin related ligand NRG3B1.
XX
KW Neuregulin related ligand; NRG3; neuroprotective; cell therapy;
KW epidermal growth factor-like domain; EGF-like domain; Bell's palsy;
KW ErbB4 receptor detection; amyotrophic lateral sclerosis; paralysis;
KW lou Gehrig's disease; spinal muscular atrophy; multiple sclerosis;
KW neurodegenerative disorder; Alzheimer's disease; Parkinson's disease;
KW epilepsy; Huntingdon's chorea; Down's syndrome; nerve deafness;
KW Meniere's disease; neuropathy; distal sensorimotor neuropathy;
KW autonomic neuropathy; hereditary neuropathy; Charcot-Marie-Tooth disease;
KW Refsum's disease; Abetalipoproteinaemia; Tangier disease;
KW Krabbe's disease; Metachromatic leukodystrophy; Fabry's disease;
KW Dejerine-Scottas syndrome; human; gene; ss; NRG3B1.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Domain 1. .360
FT /label= Extracellular_domain
FT /note= "Specifically claimed in claim 5"
FT Domain 286. .332
FT /label= EGF-like_domain
FT /note= "Extracellular epidermal growth factor-like
FT domain"
XX
PN US2002082229-A1.
XX
PD 27-JUN-2002.
XX
PF 26-MAR-2001; 2001US-00817647.
XX
PR 24-JUL-1997; 97US-0053641P.
PR 30-JUN-1998; 98US-00107979.
XX
PA (GETH) GENENTECH INC.
XX
PI Godowski PJ, Mark MR, Zhang D;
XX
DR WPI; 2002-617760/66.
DR N-PSDB; ABK90731.
XX
PT A new neuregulin related ligand designated NRG3 has an epidermal growth
PT factor-like domain and binds to ErbB4 receptor, and is useful to prevent
PT or treat NRG3 associated disorders, particularly nerve damage.
XX
PS Example 1; Fig 4A-B; 60pp; English.
XX
CC The invention describes a polypeptide comprising an amino acid sequence
CC encoding an epidermal growth factor (EGF)-like domain, and having the
CC binding characteristics of neuregulin related ligand (NRG3). NRG3
CC polypeptide can be used to detect ErbB4 receptor in a mammalian tissue
CC sample, and also to prevent or treat disorders associated with NRG3 such
CC as: amyotrophic lateral sclerosis (lou Gehrig's disease), Bell's palsy
CC and various conditions involving spinal muscular atrophy or paralysis,
CC neurodegenerative disorders such as Alzheimer's disease, Parkinson's
CC disease, epilepsy, multiple sclerosis, Huntingdon's chorea, Down's
CC syndrome, nerve deafness, Meniere's disease, neuropathy such as distal
CC sensorimotor neuropathy or autonomic neuropathy, hereditary neuropathies
CC such as Charcot-Marie-Tooth disease, Refsum's disease,
CC Abetalipoproteinaemia, Tangier disease, Krabbe's disease, Metachromatic
CC leukodystrophy, Fabry's disease and Dejerine-Scottas syndrome. This is
CC the amino acid sequence of the novel human neuregulin related ligand
CC (NRG3B1)
XX
SQ Sequence 720 AA;

Query Match 100.0%; Score 47; DB 5; Length 720;
Best Local Similarity 100.0%; Pred. No. 3.8e-40;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332

Search completed: November 2, 2004, 13:42:10
Job time : 159 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:11:24 ; Search time 193 Seconds
(without alignments)
140.117 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1825181 seqs, 575374646 residues

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : UniProt_02:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	277	100.0	713	1	NRG3_MOUSE	O35181 mus musculu
2	277	100.0	720	1	NRG3_HUMAN	P56975 homo sapien
3	126.5	45.7	677	1	NRG1_XENLA	O93383 xenopus lae
4	113.5	41.0	394	2	Q6TGK9	Q6tgk9 oryctolagus
5	113.5	41.0	394	2	AAR00250	Aar00250 oryctolag
6	113.5	41.0	461	2	O35947	O35947 mesocricetu
7	113.5	41.0	462	2	Q7RTW1	Q7rtw1 homo sapien
8	113.5	41.0	639	1	NRG1_HUMAN	Q02297 h pro-neure
9	113.5	41.0	640	2	Q7RTV8	Q7rtv8 homo sapien
10	111.5	40.3	298	2	Q9ESA9	Q9esa9 rattus norv
11	111.5	40.3	695	2	Q9ESB0	Q9esb0 rattus norv
12	110	39.7	115	1	NRG4_MOUSE	Q9wtx4 mus musculu
13	109	39.4	115	1	NRG4_HUMAN	Q8wwg1 homo sapien
14	104.5	37.7	241	2	Q6PK61	Q6pk61 homo sapien
15	104.5	37.7	241	2	Q7RTW0	Q7rtw0 homo sapien
16	104.5	37.7	241	2	Q07112	Q07112 bos taurus
17	104.5	37.7	241	2	AAH06492	Aah06492 homo sapi
18	104.5	37.7	296	1	SMDF_HUMAN	Q15491 homo sapien
19	104.5	37.7	296	2	Q6ICV5	Q6icv5 homo sapien
20	104.5	37.7	296	2	Q7RTW2	Q7rtw2 homo sapien
21	104.5	37.7	296	2	Q96IB3	Q96ib3 homo sapien
22	104.5	37.7	296	2	CAG29284	Cag29284 homo sapi
23	104.5	37.7	422	2	Q7RTV9	Q7rtv9 homo sapien
24	104.5	37.7	637	2	Q7RTW3	Q7rtw3 homo sapien
25	104.5	37.7	645	2	Q7RTW4	Q7rtw4 homo sapien
26	104	37.5	756	1	NRG2_MOUSE	P56974 mus musculu
27	103.5	37.4	76	2	Q810X0	Q810x0 mus musculu
28	103.5	37.4	296	2	Q8BX76	Q8bx76 mus musculu
29	103.5	37.4	645	2	Q6DR98	Q6dr98 mus musculu
30	103.5	37.4	700	2	Q6DR99	Q6dr99 mus musculu
31	102.5	37.0	111	2	Q9ESA8	Q9esa8 rattus norv
32	102.5	37.0	136	2	Q9ESA7	Q9esa7 rattus norv
33	102.5	37.0	256	2	Q9ESA6	Q9esa6 rattus norv
34	102.5	37.0	317	2	Q9ESA3	Q9esa3 rattus norv
35	102.5	37.0	323	2	Q9ESA2	Q9esa2 rattus norv
36	102.5	37.0	342	2	Q9ESA1	Q9esa1 rattus norv
37	102.5	37.0	662	1	NRG1_RAT	P43322 r pro-neure
38	102.5	37.0	700	2	Q9ESB1	Q9esb1 rattus norv
39	102.5	37.0	782	2	Q9ESA5	Q9esa5 rattus norv
40	99	35.7	89	2	Q91MZ0	Q91mz0 lumpy skin
41	98.5	35.6	602	1	NRG1_CHICK	Q05199 gallus gall
42	98	35.4	797	2	Q7QIQ6	Q7qiq6 anopheles g
43	97	35.0	54	2	Q810X1	Q810x1 mus musculu
44	92.5	33.4	2192	2	O01768	O01768 caenorhabdi
45	91.5	33.0	1213	1	JAG3_BRARE	Q90y54 brachydanio

ALIGNMENTS

RESULT 1
NRG3_MOUSE
ID NRG3_MOUSE STANDARD; PRT; 713 AA.
AC O35181;
DT 16-OCT-2001 (Rel. 40, Created)
DT 16-OCT-2001 (Rel. 40, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-
DE 3)].
GN Name=Nrg3;
OS Mus musculus (Mouse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX NCBI_TaxID=10090;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Brain;
RX MEDLINE=97420720; PubMed=9275162;
RA Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y.,
RA Hillan K., Crowley C., Brush J., Godowski P.J.;
RT "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that
RT binds and activates ErbB4.";
RL Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor.
CC Binding results in ligand-stimulated tyrosine phosphorylation and
CC activation of the receptor. Does not bind to the EGF receptor,
CC ERBB2 or ERBB3 receptors.
CC -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC a proteolytically released soluble growth factor form. The
CC membrane-bound form does not seem to be active (By similarity).
CC -!- TISSUE SPECIFICITY: Expressed in sympathetic, motor, and sensory
CC neurons.
CC -!- DEVELOPMENTAL STAGE: Detected as early as 11 dpc. At 13 dpc
CC detected mainly in the nervous system. At 16 dpc, detected in the
CC brain, spinal cord, trigeminal, vestibular-cochlear, and spinal
CC ganglia. In adults, expressed in spinal cord, and numerous brain
CC regions.
CC -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC of trafficking and proteolytic processing. Regulation of the
CC proteolytic processing involves initial intracellular domain
CC dimerization (By similarity).
CC -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC domain (By similarity).
CC -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC external face leads to the release of the soluble growth factor
CC form (By similarity).
CC -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC similarity).
CC -!- SIMILARITY: Belongs to the neuregulin family.
CC -!- SIMILARITY: Contains 1 EGF-like domain.
CC ---

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CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; AF010130; AAB70914.1; -.
DR   PIR; T44447; T44447.
DR   HSSP; P01133; 1JL9.
DR   MGD; MGI:1097165; Nrg3.
DR   GO; GO:0005515; F:protein binding; IPI.
DR   GO; GO:0007243; P:protein kinase cascade; IDA.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
KW   EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT   CHAIN         1    713       Pro-neuregulin-3, membrane-bound form.
FT   CHAIN         1    361       Neuregulin-3.
FT   DOMAIN        1    362       Extracellular (Potential).
FT   TRANSMEM    363    383       Internal signal sequence (Potential).
FT   DOMAIN      384    713       Cytoplasmic (Potential).
FT   DOMAIN      105    287       Ser/Thr-rich.
FT   DOMAIN      288    331       EGF-like.
FT   DOMAIN       13     21       Poly-Ala.
FT   DOMAIN       26     34       Poly-Ala.
FT   DOMAIN      127    135       Poly-Thr.
FT   DOMAIN      250    253       Poly-Ala.
FT   DOMAIN      254    263       Poly-Ser.
FT   DOMAIN      264    267       Poly-Thr.
FT   DISULFID    292    306       By similarity.
FT   DISULFID    300    319       By similarity.
FT   DISULFID    321    330       By similarity.
SQ   SEQUENCE   713 AA;  77369 MW;  9F7D1D5E7FC8DCF0 CRC64;

  Query Match             100.0%;  Score 277;  DB 1;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 1e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 2
NRG3_HUMAN
ID   NRG3_HUMAN     STANDARD;      PRT;   720 AA.
AC   P56975;
DT   16-OCT-2001 (Rel. 40, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-
DE   3)].
GN   Name=NRG3;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Fetal brain;
RX   MEDLINE=97420720; PubMed=9275162;
RA   Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y.,
RA   Hillan K., Crowley C., Brush J., Godowski P.J.;
RT   "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that
RT   binds and activates ErbB4.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC   -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor.
CC       Binding results in ligand-stimulated tyrosine phosphorylation and
CC       activation of the receptor. Does not bind to the EGF receptor,
CC       ERBB2 or ERBB3 receptors.
CC   -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC       a proteolytically released soluble growth factor form. The
CC       membrane-bound form does not seem to be active (By similarity).
CC   -!- TISSUE SPECIFICITY: Highly expressed in most regions of the brain
CC       with the exception of corpus callosum. Expressed at lower level in
CC       testis. Not detected in heart, placenta, lung, liver, skeletal
CC       muscle, kidney, pancreas, spleen, thymus, prostate, ovary, small
CC       intestine, colon and peripheral blood leukocytes.
CC   -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC       of trafficking and proteolytic processing. Regulation of the
CC       proteolytic processing involves initial intracellular domain
CC       dimerization (By similarity).
CC   -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC       domain (By similarity).
CC   -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC       external face leads to the release of the soluble growth factor
CC       form (By similarity).
CC   -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC       similarity).
CC   -!- SIMILARITY: Belongs to the neuregulin family.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
DR   HSSP; P01133; 1JL9.
DR   Genew; HGNC:7999; NRG3.
DR   MIM; 605533; -.
DR   GO; GO:0005576; C:extracellular; NAS.
DR   GO; GO:0005887; C:integral to plasma membrane; NAS.
DR   GO; GO:0008083; F:growth factor activity; NAS.
DR   GO; GO:0030297; F:transmembrane receptor protein tyrosine kin. . .; NAS.
DR   GO; GO:0001558; P:regulation of cell growth; NAS.
DR   GO; GO:0007170; P:transmembrane receptor protein tyrosine kin. . .; NAS.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR006210; IEGF.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   SMART; SM00181; EGF; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
KW   EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT   CHAIN         1    720       Pro-neuregulin-3, membrane-bound form.
FT   CHAIN         1    359       Neuregulin-3.
FT   DOMAIN        1    360       Extracellular (Potential).
FT   TRANSMEM    361    381       Internal signal sequence (Potential).
FT   DOMAIN      382    720       Cytoplasmic (Potential).
FT   DOMAIN      105    285       Ser/Thr-rich.
FT   DOMAIN      286    329       EGF-like.
FT   DOMAIN        5      8       Poly-Ala.
FT   DOMAIN       13     21       Poly-Ala.
FT   DOMAIN       26     34       Poly-Ala.
FT   DOMAIN      127    135       Poly-Thr.
FT   DOMAIN      252    260       Poly-Ser.
FT   DOMAIN      262    265       Poly-Thr.
FT   DISULFID    290    304       By similarity.
FT   DISULFID    298    317       By similarity.
FT   DISULFID    319    328       By similarity.
SQ   SEQUENCE   720 AA;  77900 MW;  A4D6F10DDB95A693 CRC64;

  Query Match             100.0%;  Score 277;  DB 1;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 1e-25;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 3
NRG1_XENLA
ID   NRG1_XENLA     STANDARD;      PRT;   677 AA.
AC   O93383; Q9W6N0;
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DT   16-OCT-2001 (Rel. 40, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Pro-neuregulin-1 precursor (Pro-NRG1) [Contains: Neuregulin-1].
GN   Name=NRG1;
OS   Xenopus laevis (African clawed frog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
OC   Xenopodinae; Xenopus.
OX   NCBI_TaxID=8355;
RN   [1]
RP   SEQUENCE FROM N.A. (ISOFORM ALPHA1), AND ALTERNATIVE SPLICING.
RX   MEDLINE=98352126; PubMed=9685585;
RA   Yang J.F., Zhou H., Pun S., Ip N.Y., Peng H.B., Tsim K.W.K.;
RT   "Cloning of cDNAs encoding xenopus neuregulin: expression in myotomal
RT   muscle during embryo development.";
RL   Brain Res. Mol. Brain Res. 58:59-73(1998).
RN   [2]
RP   SEQUENCE FROM N.A. (ISOFORM CRD).
RX   MEDLINE=99316087; PubMed=10383827;
RA   Yang J.F., Zhou H., Choi R.C., Ip N.Y., Peng H.B., Tsim K.W.K.;
RT   "A cysteine-rich form of Xenopus neuregulin induces the expression of
RT   acetylcholine receptors in cultured myotubes.";
RL   Mol. Cell. Neurosci. 13:415-429(1999).
CC   -!- FUNCTION: Direct ligand for the ERBB tyrosine kinase receptors.
CC       Induces expression of acetylcholine receptor in synaptic nuclei.
CC   -!- SUBCELLULAR LOCATION: Exists as a type I membrane protein and as a
CC       proteolytically released soluble growth factor form. The membrane-
CC       bound form does not seem to be active (By similarity).
CC   -!- ALTERNATIVE PRODUCTS:
CC       Event=Alternative splicing; Named isoforms=2;
CC         Comment=Additional isoforms seem to exist. Isoforms have alpha-
CC         or beta-type EGF-like domains;
CC       Name=Alpha1;
CC         IsoId=O93383-1; Sequence=Displayed;
CC       Name=CRD; Synonyms=CRD-NRG1, Cysteine-rich domain;
CC         IsoId=O93383-2; Sequence=VSP_003449, VSP_003450;
CC   -!- TISSUE SPECIFICITY: Isoform alpha1 is expressed in brain and
CC       muscle. Isoform CRD is expressed in brain and spinal cord, but at
CC       very low level in muscle.
CC   -!- DEVELOPMENTAL STAGE: Strong expression in developing brain and
CC       spinal cord of the embryo. Also expressed in the myotomal muscle.
CC   -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC       of trafficking and proteolytic processing. Regulation of the
CC       proteolytic processing involves initial intracellular domain
CC       dimerization (By similarity).
CC   -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC       domain.
CC   -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC       external face leads to the release of the soluble growth factor
CC       form.
CC   -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC       similarity).
CC   -!- SIMILARITY: Belongs to the neuregulin family.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
CC   -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF076618; AAC26804.1; -.
DR   EMBL; AF142632; AAD33893.1; -.
DR   HSSP; Q12780; 1HRE.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR007110; Ig-like.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF00047; ig; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PRINTS; PR01089; NEUREGULIN.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS50835; IG_LIKE; 1.
KW   Alternative splicing; EGF-like domain; Glycoprotein; Growth factor;
KW   Immunoglobulin domain; Transmembrane.
FT   CHAIN         1    259       Neuregulin-1 (By similarity).
FT   CHAIN         1    677       Pro-neuregulin-1, membrane-bound form (By
FT                                similarity).
FT   DOMAIN        1    260       Extracellular (Potential).
FT   TRANSMEM    261    280       Internal signal sequence (Potential).
FT   DOMAIN      281    677       Cytoplasmic (Potential).
FT   DOMAIN       37    132       Ig-like C2-type.
FT   DOMAIN      188    232       EGF-like.
FT   DISULFID     57    116       By similarity.
FT   DISULFID    192    206       By similarity.
FT   DISULFID    200    220       By similarity.
FT   DISULFID    222    231       By similarity.
FT   DOMAIN        1     25       Lys-rich.
FT   CARBOHYD    124    124       N-linked (GlcNAc. . .) (Potential).
FT   CARBOHYD    130    130       N-linked (GlcNAc. . .) (Potential).
FT   VARSPLIC      1    136       MAEKKKVKEGKGRKGKGKKDRKGKKAEGSDQGAAASPKLKE
FT                                IKTQSVQEGKKLVLKCQAVSEQPSLKFRWFKGEKEIGAKNK
FT                                PDSKPEHIKIRGKKKSSELQISKASSADNGEYKCMVSNQLG
FT                                NDTVTVNVTIVPK -> MSEDTAEGLQNQCSEQSSDPPSAE
FT                                LQNEESMPETQDEEETTHGITGLAITCCVCLEADRLRICLN
FT                                SEKICIIPILACLISLCLCIAGLKWVFVDKIFEYDSPTHLD
FT                                PGHRGQDLILYTDTAPSTLVPSSVRTLPVIIPTTDSKAAVT
FT                                FKFGTSLLPTE (in isoform CRD).
FT                                /FTId=VSP_003449.
FT   VARSPLIC    223    252       KPGFTGARCTETDPLRVVRSEKHLGIEFME -> PNEFTGD
FT                                RCQNYVMASFYK (in isoform CRD).
FT                                /FTId=VSP_003450.
SQ   SEQUENCE   677 AA;  75794 MW;  49279E8F5BAE396F CRC64;

  Query Match             45.7%;  Score 126.5;  DB 1;  Length 677;
  Best Local Similarity   43.5%;  Pred. No. 4.4e-07;
  Matches   20;  Conservative   10;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | ||:  ||:| |||:|:  :| |::  |:|| |: | || :
Db        188 HLIKCSDKEKTYCVNGGECYVLNGITSSNQFMCKCKPGFTGARCTE 233


RESULT 4
Q6TGK9
ID   Q6TGK9      PRELIMINARY;      PRT;   394 AA.
AC   Q6TGK9;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Neuregulin 1 alpha isoform (Fragment).
OS   Oryctolagus cuniculus (Rabbit).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX   NCBI_TaxID=9986;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Hendrickx J.;
RL   Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
DR   EMBL; AY421758; AAR00250.1; -.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR006210; IEGF.
DR   InterPro; IPR003599; Ig.
DR   InterPro; IPR007110; Ig-like.
DR   InterPro; IPR003598; Ig_c2.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
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DR   Pfam; PF00047; ig; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PRINTS; PR01089; NEUREGULIN.
DR   SMART; SM00181; EGF; 1.
DR   SMART; SM00409; IG; 1.
DR   SMART; SM00408; IGc2; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS50835; IG_LIKE; 1.
KW   EGF-like domain.
FT   NON_TER       1      1
FT   NON_TER     394    394
SQ   SEQUENCE   394 AA;  42980 MW;  C183EE80927443F9 CRC64;

  Query Match             41.0%;  Score 113.5;  DB 2;  Length 394;
  Best Local Similarity   34.8%;  Pred. No. 1e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |    | :|:  :|:| ||||::: |:   :: |:|: |: | || :
Db        169 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 214


RESULT 5
AAR00250
ID   AAR00250     PRELIMINARY;      PRT;   394 AA.
AC   AAR00250;
DT   02-MAR-2004 (TrEMBLrel. 27, Created)
DT   02-MAR-2004 (TrEMBLrel. 27, Last sequence update)
DT   02-MAR-2004 (TrEMBLrel. 27, Last annotation update)
DE   Neuregulin 1 alpha isoform (Fragment).
OS   Oryctolagus cuniculus (Rabbit).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX   NCBI_TaxID=9986;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Hendrickx J.;
RL   Submitted (SEP-2003) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AY421758; AAR00250.1; -.
FT   NON_TER       1      1
FT   NON_TER     394    394
SQ   SEQUENCE   394 AA;  42980 MW;  C183EE80927443F9 CRC64;

  Query Match             41.0%;  Score 113.5;  DB 2;  Length 394;
  Best Local Similarity   34.8%;  Pred. No. 1e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |    | :|:  :|:| ||||::: |:   :: |:|: |: | || :
Db        169 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 214


RESULT 6
O35947
ID   O35947       PRELIMINARY;      PRT;   461 AA.
AC   O35947;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Neuregulin.
OS   Mesocricetus auratus (Golden hamster).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC   Mesocricetus.
OX   NCBI_TaxID=10036;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Velasco J.A., Feijoo E., Avila M.A., Notario V.;
RL   Submitted (APR-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
DR   EMBL; U96612; AAB71812.1; -.
DR   HSSP; Q12780; 1HRE.
DR   GO; GO:0005102; F:receptor binding; IEA.
DR   GO; GO:0009790; P:embryonic development; IEA.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR006210; IEGF.
DR   InterPro; IPR007110; Ig-like.
DR   InterPro; IPR003598; Ig_c2.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF00047; ig; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PRINTS; PR01089; NEUREGULIN.
DR   SMART; SM00181; EGF; 1.
DR   SMART; SM00408; IGc2; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS50835; IG_LIKE; 1.
KW   EGF-like domain.
SQ   SEQUENCE   461 AA;  50890 MW;  935C9560F7148336 CRC64;

  Query Match             41.0%;  Score 113.5;  DB 2;  Length 461;
  Best Local Similarity   34.8%;  Pred. No. 1.2e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |    | :|:  :|:| ||||::: |:   :: |:|: |: | || :
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 223


RESULT 7
Q7RTW1
ID   Q7RTW1       PRELIMINARY;      PRT;   462 AA.
AC   Q7RTW1;
DT   01-MAR-2004 (TrEMBLrel. 26, Created)
DT   01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Neuregulin 1 isoform ndf43.
GN   Name=NRG1;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   PubMed=12145742;
RA   Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S.,
RA   Sigmundsson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S.,
RA   Ivarsson O., Chou T.T., Hjaltason O., Birgisdottir B., Jonsson H.,
RA   Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
RA   Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
RA   Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,
RA   Andresson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E.,
RA   Kong A., Gulcher J.R., Petursson H., Stefansson K.;
RT   "Neuregulin 1 and Susceptibility to Schizophrenia.";
RL   Am. J. Hum. Genet. 71:0-0(2002).
CC   -!- MISCELLANEOUS: The sequence shown here is derived from an
CC       EMBL/GenBank/DDBJ third party annotation (TPA) entry.
DR   EMBL; BK000383; DAA00045.1; -.
DR   GO; GO:0005102; F:receptor binding; IEA.
DR   GO; GO:0009790; P:embryonic development; IEA.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR007110; Ig-like.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF00047; ig; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PRINTS; PR01089; NEUREGULIN.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
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DR   PROSITE; PS50835; IG_LIKE; 1.
SQ   SEQUENCE   462 AA;  50848 MW;  8CAADBB30056A80D CRC64;

  Query Match             41.0%;  Score 113.5;  DB 2;  Length 462;
  Best Local Similarity   34.8%;  Pred. No. 1.2e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| |||||::: |:   :: |:|: |:| | || :
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 223


RESULT 8
NRG1_HUMAN
ID   NRG1_HUMAN     STANDARD;      PRT;   639 AA.
AC   Q02297; O14667; P98202; Q02298; Q02299; Q07110; Q07111; Q12779;
AC   Q12780; Q12781; Q12782; Q12783; Q12784; Q9UPE3;
DT   16-OCT-2001 (Rel. 40, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   01-OCT-2004 (Rel. 45, Last annotation update)
DE   Pro-neuregulin-1 precursor (Pro-NRG1) [Contains: Neuregulin-1 (Neu
DE   differentiation factor) (Heregulin) (HRG) (Breast cancer cell
DE   differentiation factor p45) (Acetylcholine receptor inducing activity)
DE   (ARIA) (Sensory and motor neuron-derived factor) (Glial growth
DE   factor)].
GN   Name=NRG1; Synonyms=HGL, NDF, HRGA, GGF, SMDF;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A. (ISOFORMS 1; 6; 7 AND 8), AND PARTIAL SEQUENCE.
RX   MEDLINE=92271253; PubMed=1350381;
RA   Holmes W.E., Sliwkowski M.X., Akita R.W., Henzel W.J., Lee J.,
RA   Park J.W., Yansura D., Abadi N., Raab H., Lewis G.D., Shepard H.M.,
RA   Kuang W.-J., Wood W.I., Goeddel D.V., Vandlen R.L.;
RT   "Identification of heregulin, a specific activator of p185erbB2.";
RL   Science 256:1205-1210(1992).
RN   [2]
RP   SEQUENCE FROM N.A. (ISOFORMS 2; 3; 4; 6; 7 AND 8).
RC   TISSUE=Kidney adenocarcinoma, and Pituitary;
RX   MEDLINE=94158863; PubMed=7509448;
RA   Wen D., Suggs S.V., Karunagaran D., Liu N., Cupples R.L., Luo Y.,
RA   Janssen A.M., Ben-Baruch N., Trollinger D.B., Jacobsen V.L.,
RA   Meng S.-Y., Lu H.S., Hu S., Chang D., Yang W., Yanigahara D.,
RA   Koski R.A., Yarden Y.;
RT   "Structural and functional aspects of the multiplicity of Neu
RT   differentiation factors.";
RL   Mol. Cell. Biol. 14:1909-1919(1994).
RN   [3]
RP   SEQUENCE FROM N.A. (ISOFORM 1).
RX   MEDLINE=92208945; PubMed=1348215;
RA   Peles E., Bacus S.S., Koski R.A., Lu H.S., Wen D., Ogden S.G.,
RA   Levy R.B., Yarden Y.;
RT   "Isolation of the neu/HER-2 stimulatory ligand: a 44 kd glycoprotein
RT   that induces differentiation of mammary tumor cells.";
RL   Cell 69:205-216(1992).
RN   [4]
RP   SEQUENCE FROM N.A. (ISOFORMS 8 AND 9).
RC   TISSUE=Brain;
RX   MEDLINE=93205115; PubMed=8096067;
RA   Marchionni M.A., Goodearl A.D.J., Chen M.S., Bermingham-McDonogh O.,
RA   Kirk C., Hendricks M., Danehy F., Misumi D., Sudhalter J.,
RA   Kobayashi K., Wroblewski D., Lynch C., Baldasarre M., Hiles I.,
RA   Davis J.B., Hsuan J.J., Totty N.F., Otsu M., McBurney R.N.,
RA   Waterfield M.D., Stroobant P., Gwynne D.;
RT   "Glial growth factors are alternatively spliced erbB2 ligands
RT   expressed in the nervous system.";
RL   Nature 362:312-318(1993).
RN   [5]
RP   SEQUENCE FROM N.A. OF GAMMA-HEREGULIN FUSION PROTEIN.
RC   TISSUE=Breast cancer;
RX   MEDLINE=97472144; PubMed=9333014;
RA   Schaefer G., Fitzpatrick V.D., Sliwkowski M.X.;
RT   "Gamma-heregulin: a novel heregulin isoform that is an autocrine
RT   growth factor for the human breast cancer cell line, MDA-MB-175.";
RL   Oncogene 15:1385-1394(1997).
RN   [6]
RP   SEQUENCE OF 1-210 FROM N.A.
RA   Schoumacher F., Herzer S., Flury N., Kueng W., Mueller H.,
RA   Eppenberger U.;
RL   Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases.
RN   [7]
RP   SEQUENCE OF 19-27.
RX   MEDLINE=93366731; PubMed=7689552;
RA   Culouscou J.-M., Plowman G.D., Carlton G.W., Green J.M., Shoyab M.;
RT   "Characterization of a breast cancer cell differentiation factor that
RT   specifically activates the HER4/p180erbB4 receptor.";
RL   J. Biol. Chem. 268:18407-18410(1993).
RN   [8]
RP   CHROMOSOMAL TRANSLOCATION.
RX   MEDLINE=99455251; PubMed=10523851;
RA   Wang X.-Z., Jolicoeur E.M., Conte N., Chaffanet M., Zhang Y.,
RA   Mozziconacci M.-J., Feiner H., Birnbaum D., Pebusque M.-J., Ron D.;
RT   "Gamma-heregulin is the product of a chromosomal translocation fusing
RT   the DOC4 and HGL/NRG1 genes in the MDA-MB-175 breast cancer cell
RT   line.";
RL   Oncogene 18:5718-5721(1999).
RN   [9]
RP   CHROMOSOMAL TRANSLOCATION.
RX   MEDLINE=20065180; PubMed=10597312;
RA   Liu X., Baker E., Eyre H.J., Sutherland G.R., Zhou M.;
RT   "Gamma-heregulin: a fusion gene of DOC-4 and neuregulin-1 derived from
RT   a chromosome translocation.";
RL   Oncogene 18:7110-7114(1999).
RN   [10]
RP   STRUCTURE BY NMR OF 175-241 (ISOFORM 1).
RX   MEDLINE=94341264; PubMed=8062828;
RA   Nagata K., Kohda D., Hatanaka H., Ichikawa S., Matsuda S.,
RA   Yamamoto T., Suzuki A., Inagaki F.;
RT   "Solution structure of the epidermal growth factor-like domain of
RT   heregulin-alpha, a ligand for p180erbB-4.";
RL   EMBO J. 13:3517-3523(1994).
CC   -!- FUNCTION: Direct ligand for ERBB3 and ERBB4 tyrosine kinase
CC       receptors. Concomitantly recruits ERBB1 and ERBB2 coreceptors,
CC       resulting in ligand-stimulated tyrosine phosphorylation and
CC       activation of the ERBB receptors. The multiple isoforms perform
CC       diverse functions such as inducing growth and differentiation of
CC       epithelial, glial, neuronal, and skeletal muscle cells; inducing
CC       expression of acetylcholine receptor in synaptic vessicles during
CC       the formation of the neuromuscular junction; stimulating
CC       lobuloalveolar budding and milk production in the mammary gland
CC       and inducing differentiation of mammary tumor cells; stimulating
CC       Schwann cell proliferation; implication in the development of the
CC       myocardium such as trabeculation of the developing heart.
CC   -!- SUBUNIT: The cytoplasmic domain interacts with the LIM domain
CC       region of LIMK1 (By similarity).
CC   -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC       a proteolytically released soluble growth factor form. The
CC       membrane-bound form does not seem to be active. The secreted
CC       isoform 9 has a signal peptide. The isoform 8 may be nuclear.
CC   -!- ALTERNATIVE PRODUCTS:
CC       Event=Alternative splicing; Named isoforms=9;
CC         Comment=Additional isoforms seem to exist. Isoforms have been
CC         classified as type I NRGs (isoforms with an Ig domain and a
CC         glycosylation domain, isoforms 1-8), type II NRGs (isoforms with
CC         an Ig domain but no glycosylation domain, isoform 9) and type
CC         III NRGs (isoforms with a Cys-rich domain, isoform 10). All
CC         these isoforms perform distinct tissue-specific functions;
CC       Name=1; Synonyms=Alpha;
CC         IsoId=Q02297-1; Sequence=Displayed;
CC       Name=2; Synonyms=Alpha1A;
CC         IsoId=Q02297-2; Sequence=VSP_003431;
CC       Name=3; Synonyms=Alpha2B;
CC         IsoId=Q02297-3; Sequence=VSP_003434, VSP_003435;
CC       Name=4; Synonyms=Alpha3;
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CC         IsoId=Q02297-4; Sequence=VSP_003432, VSP_003433;
CC       Name=6; Synonyms=Beta1, Beta1A;
CC         IsoId=Q02297-6; Sequence=VSP_003428;
CC       Name=7; Synonyms=Beta2;
CC         IsoId=Q02297-7; Sequence=VSP_003427;
CC       Name=8; Synonyms=Beta3, GGFHFB1;
CC         IsoId=Q02297-8; Sequence=VSP_003429, VSP_003430;
CC       Name=9; Synonyms=GGF2, GGFHPP2;
CC         IsoId=Q02297-9; Sequence=VSP_003425, VSP_003426, VSP_003429,
CC                                  VSP_003430;
CC       Name=10; Synonyms=SMDF;
CC         IsoId=Q15491-1; Sequence=External;
CC   -!- TISSUE SPECIFICITY: Type I isoforms are the predominant forms
CC       expressed in the endocardium. Isoform alpha is expressed in
CC       breast, ovary, testis, prostate, heart, skeletal muscle, lung,
CC       placenta liver, kidney, salivary gland, small intestine and brain,
CC       but not in uterus, stomach, pancreas, and spleen. Isoform 3 is the
CC       predominant form in mesenchymal cells and in nonneuronal organs,
CC       whereas isoform 5 is the major neuronal form. Isoform 8 is
CC       expressed in spinal cord and brain. Isoform 9 is the major form in
CC       skeletal muscle cells; in the nervous system it is expressed in
CC       spinal cord and brain. Also detected in adult heart, placenta,
CC       lung, liver, kidney, and pancreas.
CC   -!- DEVELOPMENTAL STAGE: Detectable at early embryonic ages.
CC   -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC       of trafficking and proteolytic processing. Regulation of the
CC       proteolytic processing involves initial intracellular domain
CC       dimerization (By similarity).
CC   -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC       domain.
CC   -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC       external face leads to the release of the soluble growth factor
CC       form.
CC   -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC       similarity).
CC   -!- DISEASE: Involved in a rare t(8;11) chromosomal translocation that
CC       fuses the 5'end of ODZ4 to NRG1 (isoform 8). The product of this
CC       translocation was first thought to be an alternatively spliced
CC       isoform, called gamma-heregulin. Gamma-heregulin is a soluble
CC       activating ligand for the ERBB2-ERBB3 receptor complex and acts as
CC       an autocrine growth factor in a specific breast cancer cell line
CC       (MDA-MB-175). Not detected in breast carcinoma samples, including
CC       ductal, lobular, medullary, and mucinous histological types,
CC       neither in other breast cancer cell lines.
CC   -!- SIMILARITY: Belongs to the neuregulin family.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
CC   -!- SIMILARITY: Contains 1 immunoglobulin-like C2-type domain.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M94165; AAA58638.1; -.
DR   EMBL; M94166; AAA58639.1; -.
DR   EMBL; M94167; AAA58640.1; -.
DR   EMBL; M94168; AAA58641.1; -.
DR   EMBL; U02325; AAA19950.1; -.
DR   EMBL; U02326; AAA19951.1; -.
DR   EMBL; U02327; AAA19952.1; -.
DR   EMBL; U02328; AAA19953.1; -.
DR   EMBL; U02329; AAA19954.1; -.
DR   EMBL; U02330; AAA19955.1; -.
DR   EMBL; L12260; AAB59622.1; -.
DR   EMBL; L12261; AAB59358.1; -.

  Query Match             41.0%;  Score 113.5;  DB 1;  Length 639;
  Best Local Similarity   34.8%;  Pred. No. 1.7e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| ||||::: |:   :: |:|: |: | || :
Db        177 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 222


RESULT 9
Q7RTV8
ID   Q7RTV8      PRELIMINARY;      PRT;   640 AA.
AC   Q7RTV8;
DT   01-MAR-2004 (TrEMBLrel. 26, Created)
DT   01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Neuregulin 1 isoform HRG-alpha.
GN   Name=NRG1;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   PubMed=12145742;
RA   Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S.,
RA   Sigmundsson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S.,
RA   Ivarsson O., Chou T.T., Hjaltason O., Birgisdottir B., Jonsson H.,
RA   Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
RA   Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
RA   Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,
RA   Andresson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E.,
RA   Kong A., Gulcher J.R., Petursson H., Stefansson K.;
RT   "Neuregulin 1 and Susceptibility to Schizophrenia.";
RL   Am. J. Hum. Genet. 71:0-0(2002).
CC   -!- MISCELLANEOUS: The sequence shown here is derived from an
CC       EMBL/GenBank/DDBJ third party annotation (TPA) entry.
DR   EMBL; BK000383; DAA00048.1; -.
DR   GO; GO:0005102; F:receptor binding; IEA.
DR   GO; GO:0009790; P:embryonic development; IEA.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR007110; Ig-like.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF00047; ig; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PRINTS; PR01089; NEUREGULIN.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS50835; IG_LIKE; 1.
SQ   SEQUENCE   640 AA;  70361 MW;  11AFC54B32527ACC CRC64;

  Query Match             41.0%;  Score 113.5;  DB 2;  Length 640;
  Best Local Similarity   34.8%;  Pred. No. 1.7e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| ||||::: |:   :: |:|: |: | || :
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 223


RESULT 10
Q9ESA9
ID   Q9ESA9      PRELIMINARY;      PRT;   298 AA.
AC   Q9ESA9;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   SMDF neuregulin alpha 2b (Fragment).
GN   Name=Nrg1;
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
```

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RP   SEQUENCE FROM N.A.
RC   STRAIN=BDIX;
RA   Carroll S.L., Anderson K.D., Frohnert P.W.;
RL   Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
DR   EMBL; AF194440; AAG28429.1; -.
DR   GO; GO:0005102; F:receptor binding; IEA.
DR   GO; GO:0009790; P:embryonic development; IEA.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR002114; HPr_SerP_S.
DR   InterPro; IPR006210; IEGF.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PRINTS; PR01089; NEUREGULIN.
DR   SMART; SM00181; EGF; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS00589; PTS_HPR_SER; UNKNOWN_1.
KW   EGF-like domain.
FT   NON_TER       1      1
FT   NON_TER     298    298
SQ   SEQUENCE   298 AA;  32851 MW;  BD76F014C2B33026 CRC64;

  Query Match             40.3%;  Score 111.5;  DB 2;  Length 298;
  Best Local Similarity   34.8%;  Pred. No. 1.4e-05;
  Matches   16;  Conservative   13;  Mismatches   16;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| |||| :: |:   :: |:|: |: | || :
Db         48 HLIKCAEKEKTFCVNGGECFTVKDLSNPSRYLCKCQPGFTGARCTE 93


RESULT 11
Q9ESB0
ID   Q9ESB0      PRELIMINARY;      PRT;   695 AA.
AC   Q9ESB0;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   SMDF neuregulin alpha 2a.
GN   Name=Nrg1;
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BDIX;
RA   Carroll S.L., Anderson K.D., Frohnert P.W.;
RL   Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
DR   EMBL; AF194439; AAG28428.1; -.
DR   HSSP; Q12780; 1HRE.
DR   GO; GO:0005102; F:receptor binding; IEA.
DR   GO; GO:0009790; P:embryonic development; IEA.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR002114; HPr_SerP_S.
DR   InterPro; IPR006210; IEGF.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PRINTS; PR01089; NEUREGULIN.
DR   SMART; SM00181; EGF; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS00589; PTS_HPR_SER; UNKNOWN_1.
KW   EGF-like domain.
SQ   SEQUENCE   695 AA;  75646 MW;  5277F2CBA2FB6878 CRC64;

  Query Match             40.3%;  Score 111.5;  DB 2;  Length 695;
  Best Local Similarity   34.8%;  Pred. No. 3.3e-05;
  Matches   16;  Conservative   13;  Mismatches   16;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| |||| :: |:   :: |:|: |: | || :
Db        234 HLIKCAEKEKTFCVNGGECFTVKDLSNPSRYLCKCQPGFTGARCTE 279


RESULT 12
NRG4_MOUSE
ID   NRG4_MOUSE      STANDARD;      PRT;   115 AA.
AC   Q9WTX4;
DT   16-OCT-2001 (Rel. 40, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Pro-neuregulin-4, short isoform (Pro-NRG4) [Contains: Neuregulin-4
DE   (NRG-4)].
GN   Name=Nrg4;
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=C57BL/6J; TISSUE=Liver;
RX   MEDLINE=99276098; PubMed=10348342;
RA   Harari D., Tzahar E., Romano J., Shelly M., Pierce J.H., Andrews G.C.,
RA   Yarden Y.;
RT   "Neuregulin-4: a novel growth factor that acts through the ErbB-4
RT   receptor tyrosine kinase.";
RL   Oncogene 18:2681-2689(1999).
CC   -!- FUNCTION: Low affinity ligand for the ERBB4 tyrosine kinase
CC       receptor. Concomitantly recruits ERBB1 and ERBB2 coreceptors,
CC       resulting in ligand-stimulated tyrosine phosphorylation and
CC       activation of the ERBB receptors. Does not bind to the ERBB1,
CC       ERBB2 and ERBB3 receptors.
CC   -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC       a proteolytically released soluble growth factor form. The
CC       membrane-bound form does not seem to be active (By similarity).
CC   -!- ALTERNATIVE PRODUCTS:
CC       Event=Alternative splicing; Named isoforms=1;
CC         Comment=At least 3 isoforms may be produced;
CC       Name=1;
CC         IsoId=Q9WTX4-1; Sequence=Displayed;
CC   -!- TISSUE SPECIFICITY: Highly expressed in pancreas; weakly expressed
CC       in muscle.
CC   -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC       of trafficking and proteolytic processing. Regulation of the
CC       proteolytic processing involves initial intracellular domain
CC       dimerization (By similarity).
CC   -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC       domain (By similarity).
CC   -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC       external face leads to the release of the soluble growth factor
CC       form (By similarity).
CC   -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC       similarity).
CC   -!- SIMILARITY: Belongs to the neuregulin family.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AF083067; AAD21874.1; -.
DR   HSSP; Q12780; 1HRE.
DR   MGD; MGI:1933833; Nrg4.
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```
DR   InterPro; IPR001336; EGF_1.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR006210; IEGF.
DR   Pfam; PF00008; EGF; 1.
DR   PRINTS; PR00009; EGFTGF.
DR   SMART; SM00181; EGF; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; FALSE_NEG.
DR   PROSITE; PS50026; EGF_3; 1.
KW   Alternative splicing; EGF-like domain; Glycoprotein; Growth factor;
KW   Multigene family; Transmembrane.
FT   CHAIN         1    115       Pro-neuregulin-4, membrane-bound form.
FT   CHAIN         1     61       Neuregulin-4.
FT   DOMAIN        1     62       Extracellular (Potential).
FT   TRANSMEM     63     83       Internal signal sequence (Potential).
FT   DOMAIN       84    115       Cytoplasmic (Potential).
FT   DOMAIN        5     46       EGF-like.
FT   DISULFID      9     23       By similarity.
FT   DISULFID     17     34       By similarity.
FT   DISULFID     36     45       By similarity.
FT   CARBOHYD     39     39       N-linked (GlcNAc. . .) (Potential).
FT   CARBOHYD     60     60       N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   115 AA;  12743 MW;  989A1E376F857B49 CRC64;

  Query Match             39.7%;  Score 110;  DB 1;  Length 115;
  Best Local Similarity   42.2%;  Pred. No. 8.1e-06;
  Matches   19;  Conservative    8;  Mismatches   16;  Indels    2;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQ 45
              | :||   :  ::||| | |:|| |:      ||| | | | ||::
Db          5 HEQPCGPRHRSFCLNGGICYVIPTIPS--PFCRCIENYTGARCEE 47


RESULT 13
NRG4_HUMAN
ID   NRG4_HUMAN     STANDARD;      PRT;   115 AA.
AC   Q8WWG1;
DT   28-FEB-2003 (Rel. 41, Created)
DT   28-FEB-2003 (Rel. 41, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Pro-neuregulin-4, short isoform (Pro-NRG4) [Contains: Neuregulin-4
DE   (NRG-4)].
GN   Name=NRG4;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Liver;
RX   MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,
RA   Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,
RA   Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
CC   -!- FUNCTION: Low affinity ligand for the ERBB4 tyrosine kinase
CC       receptor. Concomitantly recruits ERBB1 and ERBB2 coreceptors,
CC       resulting in ligand-stimulated tyrosine phosphorylation and
CC       activation of the ERBB receptors. Does not bind to the ERBB1,
CC       ERBB2 and ERBB3 receptors (By similarity).
CC   -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC       a proteolytically released soluble growth factor form. The
CC       membrane-bound form does not seem to be active (By similarity).
CC   -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC       of trafficking and proteolytic processing. Regulation of the
CC       proteolytic processing involves initial intracellular domain
CC       dimerization (By similarity).
CC   -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC       domain (By similarity).
CC   -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC       external face leads to the release of the soluble growth factor
CC       form (By similarity).
CC   -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC       similarity).
CC   -!- SIMILARITY: Belongs to the neuregulin family.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
CC   ----------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; BC017568; AAH17568.1; -.
DR   HSSP; P01132; 1GK5.
DR   InterPro; IPR001336; EGF_1.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   Pfam; PF00008; EGF; 1.
DR   PRINTS; PR00009; EGFTGF.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; FALSE_NEG.
DR   PROSITE; PS50026; EGF_3; 1.
KW   EGF-like domain; Glycoprotein; Growth factor; Multigene family;
KW   Transmembrane.
FT   CHAIN         1    115       Pro-neuregulin-4, membrane-bound form.
FT   CHAIN         1     61       Neuregulin-4.
FT   DOMAIN        1     62       Extracellular (Potential).
FT   TRANSMEM     63     83       Internal signal sequence (Potential).
FT   DOMAIN       84    115       Cytoplasmic (Potential).
FT   DOMAIN        5     46       EGF-like.
FT   DISULFID      9     23       By similarity.
FT   DISULFID     17     34       By similarity.
FT   DISULFID     36     45       By similarity.
FT   CARBOHYD     39     39       N-linked (GlcNAc. . .) (Potential).
SQ   SEQUENCE   115 AA;  12722 MW;  72F962E2D0F37AC3 CRC64;

  Query Match             39.4%;  Score 109;  DB 1;  Length 115;
  Best Local Similarity   42.2%;  Pred. No. 1.1e-05;
  Matches   19;  Conservative    7;  Mismatches   17;  Indels    2;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQ 45
              | :||     ::||| | |:|| |:      ||| | | | ||::
Db          5 HEEPCGPSHKSFCLNGGLCYVIPTIPS--PFCRCVENYTGARCEE 47


RESULT 14
Q6PK61
ID   Q6PK61      PRELIMINARY;      PRT;   241 AA.
AC   Q6PK61;
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Neuregulin 1, isoform HRG-beta3.
GN   Name=NRG1;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
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```
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Ovary;
RX   MEDLINE=22388257; PubMed=12477932;
RA   Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
RA   Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
RA   Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
RA   Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
RA   Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
RA   Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
RA   Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
RA   Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
RA   Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
RA   Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
RA   Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
RA   Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
RA   Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
RA   Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
RA   Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
RA   Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
RA   Jones S.J., Marra M.A.;
RT   "Generation and initial analysis of more than 15,000 full-length human
RT   and mouse cDNA sequences.";
RL   Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Ovary;
RA   Strausberg R.;
RL   Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
DR   EMBL; BC006492; AAH06492.1; -.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR006210; IEGF.
DR   InterPro; IPR003599; Ig.
DR   InterPro; IPR007110; Ig-like.
DR   InterPro; IPR003598; Ig_c2.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF00047; ig; 1.
DR   SMART; SM00181; EGF; 1.
DR   SMART; SM00409; IG; 1.
DR   SMART; SM00408; IGc2; 1.
DR   PROSITE; PS00022; EGF_1; UNKNOWN_1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS50835; IG_LIKE; 1.
KW   EGF-like domain.
SQ   SEQUENCE   241 AA;  26114 MW;  FE8B9FDF71B816B1 CRC64;

  Query Match             37.7%;  Score 104.5;  DB 2;  Length 241;
  Best Local Similarity   31.2%;  Pred. No. 8.3e-05;
  Matches   15;  Conservative   14;  Mismatches   18;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
              |   | :|:  :|:| ||||::: |:   :: |:|   : | ||  ::
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225


RESULT 15
Q7RTW0
ID   Q7RTW0      PRELIMINARY;      PRT;   241 AA.
AC   Q7RTW0;
DT   01-MAR-2004 (TrEMBLrel. 26, Created)
DT   01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   Neuregulin 1 isoform GGF (Neuregulin 1 isoform hrg-beta3).
GN   Name=NRG1;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   PubMed=12145742;
RA   Stefansson H., Sigurdsson E., Steinthorsdottir V., Bjornsdottir S.,
RA   Sigmundsson T., Ghosh S., Brynjolfsson J., Gunnarsdottir S.,
RA   Ivarsson O., Chou T.T., Hjaltason O., Birgisdottir B., Jonsson H.,
RA   Gudnadottir V.G., Gudmundsdottir E., Bjornsson A., Ingvarsson B.,
RA   Ingason A., Sigfusson S., Hardardottir H., Harvey R.P., Brunner D.,
RA   Mutel V., Gonzalo A., Lemke G., Sainz J., Johannesson G.,
RA   Andresson T., Gudbjartsson D., Manolescu A., Frigge M.L., Gurney M.E.,
RA   Kong A., Gulcher J.R., Petursson H., Stefansson K.;
RT   "Neuregulin 1 and Susceptibility to Schizophrenia.";
RL   Am. J. Hum. Genet. 71:0-0(2002).
CC   -!- MISCELLANEOUS: The sequence shown here is derived from an
CC       EMBL/GenBank/DDBJ third party annotation (TPA) entry.
DR   EMBL; BK000383; DAA00046.1; -.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR007110; Ig-like.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF00047; ig; 1.
DR   PROSITE; PS00022; EGF_1; UNKNOWN_1.
DR   PROSITE; PS50026; EGF_3; 1.
DR   PROSITE; PS50835; IG_LIKE; 1.
SQ   SEQUENCE   241 AA;  26142 MW;  D2450DB340E6B64D CRC64;

  Query Match             37.7%;  Score 104.5;  DB 2;  Length 241;
  Best Local Similarity   31.2%;  Pred. No. 8.3e-05;
  Matches   15;  Conservative   14;  Mismatches   18;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
              |   | :|:  :|:| ||||::: |:   :: |:|   : | ||  ::
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225


Search completed: November  2, 2004, 13:27:39
Job time : 195 secs
```

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:19:14 ; Search time 38 Seconds
(without alignments)
119.005 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 277
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	277	100.0	713	2	T44447	neuregulin-3 [impo
2	113.5	41.0	125	2	I38405	neu differentiatio
3	113.5	41.0	462	2	I38404	neu differentiatio
4	113.5	41.0	640	2	A43273	heregulin precurso
5	111.5	40.3	639	2	I61719	neu differentiatio
6	105.5	38.1	125	2	S62676	heregulin isoform
7	104.5	37.7	175	2	I38408	neu differentiatio
8	104.5	37.7	241	2	D43273	heregulin precurso
9	104.5	37.7	241	2	S32359	glial growth facto
10	104.5	37.7	296	2	A56943	sensory/motor neur
11	104.5	37.7	422	2	S32357	glial growth facto
12	104.5	37.7	637	2	C43273	heregulin precurso
13	104.5	37.7	645	2	B43273	heregulin, splice
14	102.5	37.0	230	2	A56210	neu differentiatio
15	102.5	37.0	636	2	I61718	neu differentiatio
16	102.5	37.0	662	2	I61722	neu differentiatio
17	98.5	35.6	602	2	A45769	acetylcholine rece
18	92.5	33.4	2180	2	T29764	hypothetical prote
19	90	32.5	850	2	JC5700	ErbB kinase activa
20	90	32.5	860	2	JC5702	ErbB kinase activa
21	90	32.5	868	2	JC5701	ErbB kinase activa
22	85	30.7	80	1	EGVZSF	growth factor - ra
23	84.5	30.5	1220	2	A56136	jagged protein pre
24	83	30.0	46	2	JT0747	epiregulin - rat
25	83	30.0	162	2	S68401	epiregulin precurs
26	83	30.0	861	2	A48825	Notch homolog Motc
27	83	30.0	2531	2	A46019	notch-1 protein -
28	82.5	29.8	177	2	A37408	betacellulin precu
29	82	29.6	85	1	EGVZM1	growth factor - my
30	82	29.6	230	2	A44074	probable EGF-like
31	82	29.6	264	2	T22380	hypothetical prote
32	80.5	29.1	178	2	JC1467	betacellulin precu
33	80	28.9	907	2	T27317	hypothetical prote
34	79.5	28.7	140	1	WMVZ9	growth factor - va
35	79.5	28.7	140	2	T30766	growth factor - va
36	79.5	28.7	142	1	WMVZ3C	growth factor - va
37	79.5	28.7	159	1	S27195	transforming growt
38	79.5	28.7	159	1	WFRT1	transforming growt
39	79.5	28.7	159	2	I57497	transforming growt
40	79	28.5	2531	2	S18188	notch protein homo
41	78	28.2	1207	1	EGHU	epidermal growth f
42	77.5	28.0	722	2	I48324	DELTA-like 1 - mou
43	77.5	28.0	2352	2	T30201	Notch homolog prot
44	76.5	27.6	1372	2	T25933	hypothetical prote
45	76	27.4	482	2	JC5092	E-selectin - pig

ALIGNMENTS

RESULT 1
T44447
neuregulin-3 [imported] - mouse
C;Species: Mus musculus (house mouse)
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Accession: T44447
R;Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillan, K.; Crov
Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997
A;Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and activ
A;Reference number: Z22773; MUID:97420720; PMID:9275162
A;Accession: T44447
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-713 <ZHA>
A;Cross-references: UNIPROT:O35181; EMBL:AF010130; NID:g2429163; PIDN:AAB70914.1; PID:g24
C;Genetics:
A;Gene: NRG3
C;Superfamily: mouse neuregulin-3

Query Match 100.0%; Score 277; DB 2; Length 713;
Best Local Similarity 100.0%; Pred. No. 6.9e-24;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334

RESULT 2
I38405
neu differentiation factor - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002
C;Accession: I38405
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fac
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38405
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-125 <RES>
A;Cross-references: EMBL:U02327; NID:g408404; PIDN:AAA19952.1; PID:g408405
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

Query Match 41.0%; Score 113.5; DB 2; Length 125;
Best Local Similarity 34.8%; Pred. No. 5.9e-06;
Matches 16; Conservative 14; Mismatches 15; Indels 1; Gaps 1;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
Db 56 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 101

```
RESULT 3
I38404
neu differentiation factor - human
C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 09-Jul-2004
C;Accession: I38404
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38404
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-462 <RES>
A;Cross-references: UNIPROT:Q02297; EMBL:U02326; NID:g408402; PIDN:AAA19951.1; PID:g4084
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

  Query Match             41.0%;  Score 113.5;  DB 2;  Length 462;
  Best Local Similarity   34.8%;  Pred. No. 1.8e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| ||||::: |:   :: |:|: |: | || :
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 223


RESULT 4
A43273
heregulin precursor, splice form alpha - human
N;Alternate names: breast cancer cell differentiation factor p45; Neu differentiation fa
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 08-Sep-2002
C;Accession: A43273; A48498; A38155
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
Science 256, 1205-1210, 1992
A;Title: Identification of heregulin, a specific activator of p185(erbB2).
A;Reference number: A43273; MUID:92271253; PMID:1350381
A;Accession: A43273
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-640 <HOL>
A;Experimental source: breast tumor cell line, MDA-MB-231, ATCC HTB 26
A;Note: sequence extracted from NCBI backbone (NCBIP:103250)
R;Culouscou, J.M.; Plowman, G.D.; Carlton, G.W.; Green, J.M.; Shoyab, M.
J. Biol. Chem. 268, 18407-18410, 1993
A;Title: Characterization of a breast cancer cell differentiation factor that specifical
A;Reference number: A48498; MUID:93366731; PMID:7689552
A;Accession: A48498
A;Molecule type: protein
A;Residues: 20-21,'X',23-24,'XX',27-28 <CUL>
R;Peles, E.; Bacus, S.S.; Koski, R.A.; Lu, H.S.; Wen, D.; Ogden, S.G.; Levy, R.B.; Yarde
Cell 69, 205-216, 1992
A;Title: Isolation of the neu/HER-2 stimulatory ligand: a 44 kd glycoprotein that induce
A;Reference number: A38155; MUID:92208945; PMID:1348215
A;Accession: A38155
A;Molecule type: protein
A;Residues: 'X',15-16,'X',18-20,'RG',23-24,'GP',27,'E',29,'XP',32-36 <PEL>
A;Note: sequence extracted from NCBI backbone (NCBIP:91347)
C;Genetics:
A;Gene: GDB:HGL
A;Cross-references: GDB:132656; OMIM:142445
A;Map position: 8p22-8p11
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
C;Keywords: alternative splicing; glycoprotein
F;182-221/Domain: EGF homology <EGF>

  Query Match             41.0%;  Score 113.5;  DB 2;  Length 640;
  Best Local Similarity   34.8%;  Pred. No. 2.4e-05;
  Matches   16;  Conservative   14;  Mismatches   15;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| ||||::: |:   :: |:|: |: | || :
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPGFTGARCTE 223


RESULT 5
I61719
neu differentiation factor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 09-Jul-2004
C;Accession: I61719; I61723; I61716; I61717; I61724; A38220
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I61719
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-639 <RES>
A;Cross-references: UNIPROT:P43322; EMBL:U02319; NID:g408388; PIDN:AAA19944.1; PID:g4083
A;Accession: I61723
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-639 <RE2>
A;Cross-references: EMBL:U02323; NID:g408396; PIDN:AAA19948.1; PID:g408397
A;Accession: I61716
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-422,'H','NL',637-638,'ELRRNKAYRSKCMQIQLSATHLRPSSITHLGFIL' <RE3>
A;Cross-references: EMBL:U02316; NID:g408382; PIDN:AAA19941.1; PID:g408383
A;Accession: I61717
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-422,'H','NL',637-638,'ELRRNKAYRSKCMQIQLSATHLRPSSITHLGFIL' <RE4>
A;Cross-references: EMBL:U02317; NID:g408384; PIDN:AAA19942.1; PID:g408385
A;Accession: I61724
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-422 <RE5>
A;Cross-references: EMBL:U02324; NID:g408398; PIDN:AAA19949.1; PID:g408399
R;Wen, D.; Peles, E.; Cupples, R.; Suggs, S.V.; Bacus, S.S.; Luo, Y.; Trail, G.; Hu, S.,
Cell 69, 559-572, 1992
A;Title: Neu differentiation factor: a transmembrane glycoprotein containing an EGF doma
A;Reference number: A38220; MUID:92257596; PMID:1349853
A;Accession: A38220
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-422 <WEN>
A;Note: sequence extracted from NCBI backbone (NCBIN:101767, NCBIP:101768)
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology

  Query Match             40.3%;  Score 111.5;  DB 2;  Length 639;
  Best Local Similarity   34.8%;  Pred. No. 4e-05;
  Matches   16;  Conservative   13;  Mismatches   16;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |   | :|:  :|:| |||| :: |:   :: |:|: |: | || :
Db        178 HLIKCAEKEKTFCVNGGECFTVKDLSNPSRYLCKCQPGFTGARCTE 223


RESULT 6
S62676
heregulin isoform alpha 2 - human (fragments)
N;Alternate names: differentiation factor neu isoform alpha 2
C;Species: Homo sapiens (man)
C;Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 08-Sep-2002
C;Accession: S62676
R;Hara, S.; Liu, N.; Meng, S.Y.; Lu, H.S.
Biochim. Biophys. Acta 1292, 168-176, 1996
A;Title: Isolation and structural characterization of recombinant human neu differentia
A;Reference number: S62676; MUID:96139341; PMID:8547341
A;Accession: S62676
A;Status: preliminary
A;Molecule type: protein
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A;Residues: 1-6;7-16;17-30;31-38;39-58;59-92;93-120;121-125 <HAR>
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
C;Keywords: proto-oncogene

  Query Match             38.1%;  Score 105.5;  DB 2;  Length 125;
  Best Local Similarity   32.6%;  Pred. No. 4.8e-05;
  Matches   15;  Conservative   14;  Mismatches   16;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQ 45
              |    | :|:  :|:| ||||::: |:   :: |:|:  : | || :
Db         75 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCQPQFTGARCTE 120


RESULT 7
I38408
neu differentiation factor - human (fragment)
C;Species: Homo sapiens (man)
C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 08-Sep-2002
C;Accession: I38408
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38408
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-175 <RES>
A;Cross-references: EMBL:U02330; NID:g408410; PIDN:AAA19955.1; PID:g408411
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;116-155/Domain: EGF homology <EGF>

  Query Match             37.7%;  Score 104.5;  DB 2;  Length 175;
  Best Local Similarity   31.2%;  Pred. No. 8.3e-05;
  Matches   15;  Conservative   14;  Mismatches   18;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
              |    | :|:  :|:| ||||::: |:   :: |:|   : | ||  ::
Db        112 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 159


RESULT 8
D43273
heregulin precursor, splice form beta-3 - human
N;Alternate names: glial growth factor HRG-beta-3; neuregulin
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: D43273; S32358
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
Science 256, 1205-1210, 1992
A;Title: Identification of heregulin, a specific activator of p185(erbB2).
A;Reference number: A43273; MUID:92271253; PMID:1350381
A;Accession: D43273
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A;Molecule type: mRNA
A;Residues: 1-241 <HOL>
A;Cross-references: UNIPROT:Q02297
R;Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Bermingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993
A;Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the n
A;Reference number: S32357; MUID:93205115; PMID:8096067
A;Accession: S32358
A;Molecule type: mRNA
A;Residues: 1-241 <MAR>
A;Cross-references: GB:L12261; NID:g292049; PIDN:AAB59358.1; PID:g292050
C;Genetics:
A;Gene: GDB:HGL; GGF
A;Cross-references: GDB:132656; OMIM:142445
A;Map position: 8p22-8p11
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
C;Keywords: alternative splicing
F;182-221/Domain: EGF homology <EGF>

  Query Match             37.7%;  Score 104.5;  DB 2;  Length 241;
  Best Local Similarity   31.2%;  Pred. No. 0.00011;
  Matches   15;  Conservative   14;  Mismatches   18;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
              |    | :|:  :|:| ||||::: |:   :: |:|   : | ||  ::
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225


RESULT 9
S32359
glial growth factor - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 19-Mar-1997 #sequence_revision 01-Aug-1997 #text_change 09-Jul-2004
C;Accession: S32359
R;Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Bermingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993
A;Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the n
A;Reference number: S32357; MUID:93205115; PMID:8096067
A;Accession: S32359
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-241 <MAR>
A;Cross-references: UNIPROT:Q07112; GB:L12259; NID:g289413; PIDN:AAA30540.1; PID:g289414
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;182-221/Domain: EGF homology <EGF>

  Query Match             37.7%;  Score 104.5;  DB 2;  Length 241;
  Best Local Similarity   31.2%;  Pred. No. 0.00011;
  Matches   15;  Conservative   14;  Mismatches   18;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
              |    | :|:  :|:| ||||::: |:   :: |:|   : | ||  ::
Db        178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225


RESULT 10
A56943
sensory/motor neuron-derived factor - human
C;Species: Homo sapiens (man)
C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 09-Jul-2004
C;Accession: A56943
R;Ho, W.H.; Armanini, M.P.; Nuijens, A.; Phillips, H.S.; Osheroff, P.L.
J. Biol. Chem. 270, 14523-14532, 1995
A;Title: Sensory and motor neuron-derived factor. A novel heregulin variant highly expre
A;Reference number: A56943; MUID:95301541; PMID:7782315
A;Accession: A56943
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-296 <HOA>
A;Cross-references: UNIPROT:Q15491; GB:L41827; NID:g862422; PIDN:AAC41764.1; PID:g862423
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;237-276/Domain: EGF homology <EGF>

  Query Match             37.7%;  Score 104.5;  DB 2;  Length 296;
  Best Local Similarity   31.2%;  Pred. No. 0.00013;
  Matches   15;  Conservative   14;  Mismatches   18;  Indels    1;  Gaps    1;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
              |    | :|:  :|:| ||||::: |:   :: |:|   : | ||  ::
Db        233 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 280


RESULT 11
S32357
glial growth factor - human
C;Species: Homo sapiens (man)
C;Date: 02-Dec-1993 #sequence_revision 10-Nov-1995 #text_change 08-Sep-2002
C;Accession: S32357
R;Marchionni, M.A.; Goodearl, A.D.J.; Chen, M.S.; Bermingham-McDonogh, O.; Kirk, C.; Hen
les, I.; Davis, J.B.; Hsuan, J.J.; Totty, N.F.; Otsu, M.; McBurney, R.N.; Waterfield, M.
Nature 362, 312-318, 1993
```

A;Title: Glial growth factors are alternatively spliced erbB2 ligands expressed in the n
A;Reference number: S32357; MUID:93205115; PMID:8096067
A;Accession: S32357
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-422 <MAR>
A;Cross-references: GB:L12260; NID:g292047; PIDN:AAB59622.1; PID:g292048
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;363-402/Domain: EGF homology <EGF>

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Matches 15; Conservative 14; Mismatches 18; Indels 1; Gaps 1;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKH-CRCKEGYQGVRCDQFL 47
Db 359 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 406

RESULT 12
C43273
heregulin precursor, splice form beta-2 - human
C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 08-Sep-2002
C;Accession: C43273; I38407
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
Science 256, 1205-1210, 1992
A;Title: Identification of heregulin, a specific activator of p185(erbB2).
A;Reference number: A43273; MUID:92271253; PMID:1350381
A;Accession: C43273
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A;Molecule type: mRNA
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R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38407
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
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C;Genetics:
A;Gene: GDB:HGL
A;Cross-references: GDB:132656; OMIM:142445
A;Map position: 8p22-8p11
C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
C;Keywords: alternative splicing
F;182-221/Domain: EGF homology <EGF>

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Db 178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225

RESULT 13
B43273
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C;Species: Homo sapiens (man)
C;Date: 31-Dec-1993 #sequence_revision 31-Dec-1993 #text_change 09-Jul-2004
C;Accession: B43273; I38406
R;Holmes, W.E.; Sliwkowski, M.X.; Akita, R.W.; Henzel, W.J.; Lee, J.; Park, J.W.; Yansur
Science 256, 1205-1210, 1992
A;Title: Identification of heregulin, a specific activator of p185(erbB2).
A;Reference number: A43273; MUID:92271253; PMID:1350381
A;Accession: B43273
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual tra
A;Molecule type: mRNA
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A;Cross-references: UNIPROT:Q02297
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.;
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448
A;Accession: I38406
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
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C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
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Db 178 HLVKCAEKEKTFCVNGGECFMVKDLSNPSRYLCKCPNEFTGDRCQNYV 225

RESULT 14
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C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Jul-1996 #sequence_revision 02-Jul-1996 #text_change 08-Sep-2002
C;Accession: A56210
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
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Query Match 37.0%; Score 102.5; DB 2; Length 230;
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RESULT 15
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C;Date: 29-May-1998 #sequence_revision 29-May-1998 #text_change 09-Jul-2004
C;Accession: I61718; I61721; I61720
R;Wen, D.; Suggs, S.V.; Karunagaran, D.; Liu, N.; Cupples, R.L.; Luo, Y.; Janssen, A.M.
Mol. Cell. Biol. 14, 1909-1919, 1994
A;Title: Structural and functional aspects of the multiplicity of Neu differentiation fa
A;Reference number: A56210; MUID:94158863; PMID:7509448
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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-444,'A',446-636 <RE2>
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A;Accession: I61720
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-298,386,'V',388,'TR',391 <RE3>
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C;Superfamily: human heregulin; EGF homology; immunoglobulin homology
F;182-221/Domain: EGF homology <EGF>

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Db 178 HLIKCAEKEKTFCVNGGECFTVKDLSNPSRYLCKCPNEFTGDRCQNYV 225

Search completed: November 2, 2004, 13:28:22
Job time : 39 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:27:45 ; Search time 128 Seconds
(without alignments)
119.048 Million cell updates/sec

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Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 1370721 seqs, 324215800 residues

Total number of hits satisfying chosen parameters: 1370721

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	277	100.0	47	9	US-09-817-647-4	Sequence 4, Appli
2	277	100.0	47	9	US-09-817-647-8	Sequence 8, Appli
3	277	100.0	47	9	US-09-877-665-4	Sequence 4, Appli
4	277	100.0	47	9	US-09-877-665-8	Sequence 8, Appli
5	277	100.0	47	13	US-10-136-573A-4	Sequence 4, Appli
6	277	100.0	47	13	US-10-136-573A-8	Sequence 8, Appli
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10	277	100.0	157	15	US-10-609-370-2	Sequence 2, Appli
11	277	100.0	360	9	US-09-817-647-7	Sequence 7, Appli
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15	277	100.0	362	9	US-09-817-647-3	Sequence 3, Appli
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19	277	100.0	696	9	US-09-817-647-23	Sequence 23, Appl
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35	113.5	41.0	49	14	US-10-215-862-14	Sequence 14, Appl
36	113.5	41.0	50	13	US-10-096-241-12	Sequence 12, Appl
37	113.5	41.0	53	15	US-10-609-370-17	Sequence 17, Appl
38	113.5	41.0	66	14	US-10-082-747A-2	Sequence 2, Appli
39	113.5	41.0	95	14	US-10-022-609-12	Sequence 12, Appl
40	113.5	41.0	99	9	US-09-795-668-35	Sequence 35, Appl
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42	113.5	41.0	99	9	US-09-946-807-35	Sequence 35, Appl
43	113.5	41.0	125	9	US-09-795-668-30	Sequence 30, Appl
44	113.5	41.0	125	9	US-09-795-686-30	Sequence 30, Appl
45	113.5	41.0	125	9	US-09-946-807-30	Sequence 30, Appl

ALIGNMENTS

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RESULT 1
US-09-817-647-4
; Sequence 4, Application US/09817647
; Patent No. US20020082229A1
;  GENERAL INFORMATION:
;       APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;       TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                           Ligands and Uses Therefor
;       NUMBER OF SEQUENCES: 23
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Genentech, Inc.
;            STREET: 1 DNA Way
;            CITY: South San Francisco
;            STATE: California
;            COUNTRY: USA
;            ZIP: 94080
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: WinPatin (Genentech)
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/817,647
;            FILING DATE: 26-Mar-2001
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: 09/107,979
;            FILING DATE: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Conley, Deirdre L.
;            REGISTRATION NUMBER: 36,487
;            REFERENCE/DOCKET NUMBER: P1084R1-2
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 650/225-2066
;            TELEFAX: 650/952-9881
;  INFORMATION FOR SEQ ID NO: 4:
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;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 47 amino acids
;              TYPE: Amino Acid
;              TOPOLOGY: Linear
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;              LOCATION:  1-47
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;         SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-817-647-4

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RESULT 2
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; Sequence 8, Application US/09817647
; Patent No. US20020082229A1
;   GENERAL INFORMATION:
;         APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;         TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                             Ligands and Uses Therefor
;         NUMBER OF SEQUENCES: 23
;         CORRESPONDENCE ADDRESS:
;              ADDRESSEE: Genentech, Inc.
;              STREET: 1 DNA Way
;              CITY: South San Francisco
;              STATE: California
;              COUNTRY: USA
;              ZIP: 94080
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: WinPatin (Genentech)
;         CURRENT APPLICATION DATA:
;              APPLICATION NUMBER: US/09/817,647
;              FILING DATE: 26-Mar-2001
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: 09/107,979
;              FILING DATE: <Unknown>
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Conley, Deirdre L.
;              REGISTRATION NUMBER: 36,487
;              REFERENCE/DOCKET NUMBER: P1084R1-2
;         TELECOMMUNICATION INFORMATION:
;              TELEPHONE: 650/225-2066
;              TELEFAX: 650/952-9881
;    INFORMATION FOR SEQ ID NO: 8:
;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 47 amino acids
;              TYPE: Amino Acid
;              TOPOLOGY: Linear
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RESULT 3
US-09-877-665-4
; Sequence 4, Application US/09877665
; Patent No. US20020164680A1
;   GENERAL INFORMATION:
;         APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;         TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                             Ligands and Uses Therefor
;         NUMBER OF SEQUENCES: 23
;         CORRESPONDENCE ADDRESS:
;              ADDRESSEE: Genentech, Inc.
;              STREET: 1 DNA Way
;              CITY: South San Francisco
;              STATE: California
;              COUNTRY: USA
;              ZIP: 94080
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
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;              OPERATING SYSTEM: PC-DOS/MS-DOS
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;         CURRENT APPLICATION DATA:
;              APPLICATION NUMBER: US/09/877,665
;              FILING DATE: 08-Jun-2001
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: US/09/109,206
;              FILING DATE: 30-Jun-1998
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Conley, Deirdre L.
;              REGISTRATION NUMBER: 36,487
;              REFERENCE/DOCKET NUMBER: P1084R1-1
;         TELECOMMUNICATION INFORMATION:
;              TELEPHONE: 650/225-2066
;              TELEFAX: 650/952-9881
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;         SEQUENCE CHARACTERISTICS:
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;              TYPE: Amino Acid
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RESULT 4
US-09-877-665-8
; Sequence 8, Application US/09877665
; Patent No. US20020164680A1
;   GENERAL INFORMATION:
;         APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;         TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                             Ligands and Uses Therefor
;         NUMBER OF SEQUENCES: 23
;         CORRESPONDENCE ADDRESS:
;              ADDRESSEE: Genentech, Inc.
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;              STREET: 1 DNA Way
;              CITY: South San Francisco
;              STATE: California
;              COUNTRY: USA
;              ZIP: 94080
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: WinPatin (Genentech)
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;              FILING DATE: 08-Jun-2001
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: US/09/109,206
;              FILING DATE: 30-Jun-1998
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Conley, Deirdre L.
;              REGISTRATION NUMBER: 36,487
;              REFERENCE/DOCKET NUMBER: P1084R1-1
;         TELECOMMUNICATION INFORMATION:
;              TELEPHONE: 650/225-2066
;              TELEFAX: 650/952-9881
;    INFORMATION FOR SEQ ID NO: 8:
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;              TOPOLOGY: Linear
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RESULT 5
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; Sequence 4, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1C2
;  CURRENT APPLICATION NUMBER: US/10/136,573A
;  CURRENT FILING DATE:  2002-04-29
;  PRIOR APPLICATION NUMBER: US 09/480,977
;  PRIOR FILING DATE: 2000-01-11
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 4
;   LENGTH: 47
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-136-573A-4

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RESULT 6
US-10-136-573A-8
; Sequence 8, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1C2
;  CURRENT APPLICATION NUMBER: US/10/136,573A
;  CURRENT FILING DATE:  2002-04-29
;  PRIOR APPLICATION NUMBER: US 09/480,977
;  PRIOR FILING DATE: 2000-01-11
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
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;   ORGANISM: Homo sapiens
US-10-136-573A-8

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RESULT 7
US-10-215-862-4
; Sequence 4, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1D2C1
;  CURRENT APPLICATION NUMBER: US/10/215,862
;  CURRENT FILING DATE:  2002-09-24
;  PRIOR APPLICATION NUMBER: US 09/126,663
;  PRIOR FILING DATE: 1998-07-30
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 4
;   LENGTH: 47
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-215-862-4

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RESULT 8
US-10-215-862-8
; Sequence 8, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1D2C1
;  CURRENT APPLICATION NUMBER: US/10/215,862
;  CURRENT FILING DATE:  2002-09-24
;  PRIOR APPLICATION NUMBER: US 09/126,663
;  PRIOR FILING DATE: 1998-07-30
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 8
;   LENGTH: 47
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-215-862-8

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RESULT 9
US-10-240-411-6
; Sequence 6, Application US/10240411
; Publication No. US20040121326A1
; GENERAL INFORMATION:
;  APPLICANT: Harari, Daniel
;  APPLICANT:  Yarden, Yosef
;  TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ERB B-4 RECEPTOR TYROSINE
;  TITLE OF INVENTION:  SEQUENCES ENCODING SAME AND USES THEREOF
;  FILE REFERENCE: 01/21918
;  CURRENT APPLICATION NUMBER: US/10/240,411
;  CURRENT FILING DATE:  2003-05-16
;  PRIOR APPLICATION NUMBER: US 09/553,769
;  PRIOR FILING DATE: 2000-04-21
;  NUMBER OF SEQ ID NOS: 20
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 6
;   LENGTH: 48
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-10-240-411-6

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RESULT 10
US-10-609-370-2
; Sequence 2, Application US/10609370
; Publication No. US20040048295A1
; GENERAL INFORMATION:
;  APPLICANT: Young et al.
;  TITLE OF INVENTION: Heregulin-Like Factor
;  FILE REFERENCE: PF383D1
;  CURRENT APPLICATION NUMBER: US/10/609,370
;  CURRENT FILING DATE:  2003-07-01
;  PRIOR APPLICATION NUMBER: 09/097,681
;  PRIOR FILING DATE: 1998-06-16
;  PRIOR APPLICATION NUMBER: 60/049,942
;  PRIOR FILING DATE: 1997-06-17
;  NUMBER OF SEQ ID NOS: 22
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 2
;   LENGTH: 157
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-609-370-2

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RESULT 11
US-09-817-647-7
; Sequence 7, Application US/09817647
; Patent No. US20020082229A1
;   GENERAL INFORMATION:
;        APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;        TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                            Ligands and Uses Therefor
;        NUMBER OF SEQUENCES: 23
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Genentech, Inc.
;             STREET: 1 DNA Way
;             CITY: South San Francisco
;             STATE: California
;             COUNTRY: USA
;             ZIP: 94080
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: WinPatin (Genentech)
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/817,647
;             FILING DATE: 26-Mar-2001
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 09/107,979
;             FILING DATE: <Unknown>
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Conley, Deirdre L.
;             REGISTRATION NUMBER: 36,487
;             REFERENCE/DOCKET NUMBER: P1084R1-2
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 650/225-2066
;             TELEFAX: 650/952-9881
;   INFORMATION FOR SEQ ID NO: 7:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 360 amino acids
;             TYPE: Amino Acid
;             TOPOLOGY: Linear
;        FEATURE:
;             NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;             LOCATION:  1-360
;             IDENTIFICATION METHOD:
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;             OTHER INFORMATION:
;         SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-817-647-7

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Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 12
US-09-877-665-7
; Sequence 7, Application US/09877665
; Patent No. US20020164680A1
;   GENERAL INFORMATION:
;         APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;         TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                             Ligands and Uses Therefor
;         NUMBER OF SEQUENCES: 23
;         CORRESPONDENCE ADDRESS:
;              ADDRESSEE: Genentech, Inc.
;              STREET: 1 DNA Way
;              CITY: South San Francisco
;              STATE: California
;              COUNTRY: USA
;              ZIP: 94080
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: WinPatin (Genentech)
;         CURRENT APPLICATION DATA:
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;              FILING DATE: 08-Jun-2001
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: US/09/109,206
;              FILING DATE: 30-Jun-1998
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Conley, Deirdre L.
;              REGISTRATION NUMBER: 36,487
;              REFERENCE/DOCKET NUMBER: P1084R1-1
;         TELECOMMUNICATION INFORMATION:
;              TELEPHONE: 650/225-2066
;              TELEFAX: 650/952-9881
;    INFORMATION FOR SEQ ID NO: 7:
;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 360 amino acids
;              TYPE: Amino Acid
;              TOPOLOGY: Linear
;         FEATURE:
;              NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;              LOCATION:  1-360
;              IDENTIFICATION METHOD:
;              OTHER INFORMATION:
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US-09-877-665-7

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RESULT 13
US-10-136-573A-7
; Sequence 7, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1C2
;  CURRENT APPLICATION NUMBER: US/10/136,573A
;  CURRENT FILING DATE:  2002-04-29
;  PRIOR APPLICATION NUMBER: US 09/480,977
;  PRIOR FILING DATE: 2000-01-11
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 7
;   LENGTH: 360
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-136-573A-7

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RESULT 14
US-10-215-862-7
; Sequence 7, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1D2C1
;  CURRENT APPLICATION NUMBER: US/10/215,862
;  CURRENT FILING DATE:  2002-09-24
;  PRIOR APPLICATION NUMBER: US 09/126,663
;  PRIOR FILING DATE: 1998-07-30
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
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;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-215-862-7

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RESULT 15
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; Sequence 3, Application US/09817647
; Patent No. US20020082229A1
;   GENERAL INFORMATION:
;         APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
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; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 362 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: mNRG3 extracellular domainAmino acid seq
; LOCATION: 1-362
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
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US-09-817-647-3

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Db 288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334

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Job time : 129 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

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(without alignments)
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Title: US-09-107-979-4
Perfect score: 47
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

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Gapop 60.0 , Gapext 60.0

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Total number of hits satisfying chosen parameters: 1370721

Minimum DB seq length: 0
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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2	47	100.0	47	9	US-09-817-647-8	Sequence 8, Appli
3	47	100.0	47	9	US-09-877-665-4	Sequence 4, Appli
4	47	100.0	47	9	US-09-877-665-8	Sequence 8, Appli
5	47	100.0	47	13	US-10-136-573A-4	Sequence 4, Appli
6	47	100.0	47	13	US-10-136-573A-8	Sequence 8, Appli
7	47	100.0	47	14	US-10-215-862-4	Sequence 4, Appli
8	47	100.0	47	14	US-10-215-862-8	Sequence 8, Appli
9	47	100.0	48	16	US-10-240-411-6	Sequence 6, Appli
10	47	100.0	157	15	US-10-609-370-2	Sequence 2, Appli
11	47	100.0	360	9	US-09-817-647-7	Sequence 7, Appli
12	47	100.0	360	9	US-09-877-665-7	Sequence 7, Appli
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14	47	100.0	360	14	US-10-215-862-7	Sequence 7, Appli
15	47	100.0	362	9	US-09-817-647-3	Sequence 3, Appli
16	47	100.0	362	9	US-09-877-665-3	Sequence 3, Appli
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33	8	17.0	8	9	US-09-877-665-19	Sequence 19, Appl
34	8	17.0	8	13	US-10-136-573A-19	Sequence 19, Appl
35	8	17.0	8	14	US-10-215-862-19	Sequence 19, Appl
36	7	14.9	318	15	US-10-424-599-210620	Sequence 210620,
37	7	14.9	358	16	US-10-437-963-131439	Sequence 131439,
38	7	14.9	401	14	US-10-180-158-70	Sequence 70, Appl
39	7	14.9	407	14	US-10-180-158-68	Sequence 68, Appl
40	7	14.9	407	15	US-10-424-599-211304	Sequence 211304,
41	7	14.9	407	15	US-10-424-599-211305	Sequence 211305,
42	7	14.9	407	16	US-10-767-701-44139	Sequence 44139, A
43	7	14.9	421	15	US-10-425-114-62587	Sequence 62587, A
44	7	14.9	423	15	US-10-425-114-47208	Sequence 47208, A
45	7	14.9	450	15	US-10-236-392-106	Sequence 106, App

ALIGNMENTS

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RESULT 1
US-09-817-647-4
; Sequence 4, Application US/09817647
; Patent No. US20020082229A1
;  GENERAL INFORMATION:
;       APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;       TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                           Ligands and Uses Therefor
;       NUMBER OF SEQUENCES: 23
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Genentech, Inc.
;            STREET: 1 DNA Way
;            CITY: South San Francisco
;            STATE: California
;            COUNTRY: USA
;            ZIP: 94080
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: WinPatin (Genentech)
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/817,647
;            FILING DATE: 26-Mar-2001
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: 09/107,979
;            FILING DATE: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Conley, Deirdre L.
;            REGISTRATION NUMBER: 36,487
;            REFERENCE/DOCKET NUMBER: P1084R1-2
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 650/225-2066
;            TELEFAX: 650/952-9881
;  INFORMATION FOR SEQ ID NO: 4:
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;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 47 amino acids
;             TYPE: Amino Acid
;             TOPOLOGY: Linear
;        FEATURE:
;             NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;             LOCATION:  1-47
;             IDENTIFICATION METHOD:
;             OTHER INFORMATION:
;        SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-817-647-4

  Query Match             100.0%;  Score 47;  DB 9;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 2
US-09-817-647-8
; Sequence 8, Application US/09817647
; Patent No. US20020082229A1
;   GENERAL INFORMATION:
;        APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;        TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                            Ligands and Uses Therefor
;        NUMBER OF SEQUENCES: 23
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Genentech, Inc.
;             STREET: 1 DNA Way
;             CITY: South San Francisco
;             STATE: California
;             COUNTRY: USA
;             ZIP: 94080
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: WinPatin (Genentech)
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/817,647
;             FILING DATE: 26-Mar-2001
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: 09/107,979
;             FILING DATE: <Unknown>
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Conley, Deirdre L.
;             REGISTRATION NUMBER: 36,487
;             REFERENCE/DOCKET NUMBER: P1084R1-2
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 650/225-2066
;             TELEFAX: 650/952-9881
;   INFORMATION FOR SEQ ID NO: 8:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 47 amino acids
;             TYPE: Amino Acid
;             TOPOLOGY: Linear
;        FEATURE:
;             NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;             LOCATION:  1-47
;             IDENTIFICATION METHOD:
;             OTHER INFORMATION:
;        SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-817-647-8

  Query Match             100.0%;  Score 47;  DB 9;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 3
US-09-877-665-4
; Sequence 4, Application US/09877665
; Patent No. US20020164680A1
;   GENERAL INFORMATION:
;        APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;        TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                            Ligands and Uses Therefor
;        NUMBER OF SEQUENCES: 23
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Genentech, Inc.
;             STREET: 1 DNA Way
;             CITY: South San Francisco
;             STATE: California
;             COUNTRY: USA
;             ZIP: 94080
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: WinPatin (Genentech)
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/09/877,665
;             FILING DATE: 08-Jun-2001
;             CLASSIFICATION: <Unknown>
;        PRIOR APPLICATION DATA:
;             APPLICATION NUMBER: US/09/109,206
;             FILING DATE: 30-Jun-1998
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Conley, Deirdre L.
;             REGISTRATION NUMBER: 36,487
;             REFERENCE/DOCKET NUMBER: P1084R1-1
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 650/225-2066
;             TELEFAX: 650/952-9881
;   INFORMATION FOR SEQ ID NO: 4:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 47 amino acids
;             TYPE: Amino Acid
;             TOPOLOGY: Linear
;        FEATURE:
;             NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;             LOCATION:  1-47
;             IDENTIFICATION METHOD:
;             OTHER INFORMATION:
;        SEQUENCE DESCRIPTION: SEQ ID NO: 4:
US-09-877-665-4

  Query Match             100.0%;  Score 47;  DB 9;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 4
US-09-877-665-8
; Sequence 8, Application US/09877665
; Patent No. US20020164680A1
;   GENERAL INFORMATION:
;        APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;        TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                            Ligands and Uses Therefor
;        NUMBER OF SEQUENCES: 23
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Genentech, Inc.
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;              STREET: 1 DNA Way
;              CITY: South San Francisco
;              STATE: California
;              COUNTRY: USA
;              ZIP: 94080
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: WinPatin (Genentech)
;         CURRENT APPLICATION DATA:
;              APPLICATION NUMBER: US/09/877,665
;              FILING DATE: 08-Jun-2001
;              CLASSIFICATION: <Unknown>
;         PRIOR APPLICATION DATA:
;              APPLICATION NUMBER: US/09/109,206
;              FILING DATE: 30-Jun-1998
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Conley, Deirdre L.
;              REGISTRATION NUMBER: 36,487
;              REFERENCE/DOCKET NUMBER: P1084R1-1
;         TELECOMMUNICATION INFORMATION:
;              TELEPHONE: 650/225-2066
;              TELEFAX: 650/952-9881
;    INFORMATION FOR SEQ ID NO: 8:
;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 47 amino acids
;              TYPE: Amino Acid
;              TOPOLOGY: Linear
;         FEATURE:
;              NAME/KEY:  NRG3 EGF-like domain/amino acid seq.
;              LOCATION:  1-47
;              IDENTIFICATION METHOD:
;              OTHER INFORMATION:
;         SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-09-877-665-8

  Query Match             100.0%;  Score 47;  DB 9;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 5
US-10-136-573A-4
; Sequence 4, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1C2
;  CURRENT APPLICATION NUMBER: US/10/136,573A
;  CURRENT FILING DATE:  2002-04-29
;  PRIOR APPLICATION NUMBER: US 09/480,977
;  PRIOR FILING DATE: 2000-01-11
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 4
;   LENGTH: 47
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-136-573A-4

  Query Match             100.0%;  Score 47;  DB 13;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 6
US-10-136-573A-8
; Sequence 8, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1C2
;  CURRENT APPLICATION NUMBER: US/10/136,573A
;  CURRENT FILING DATE:  2002-04-29
;  PRIOR APPLICATION NUMBER: US 09/480,977
;  PRIOR FILING DATE: 2000-01-11
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 8
;   LENGTH: 47
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-136-573A-8

  Query Match             100.0%;  Score 47;  DB 13;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-43;
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Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 7
US-10-215-862-4
; Sequence 4, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1D2C1
;  CURRENT APPLICATION NUMBER: US/10/215,862
;  CURRENT FILING DATE:  2002-09-24
;  PRIOR APPLICATION NUMBER: US 09/126,663
;  PRIOR FILING DATE: 1998-07-30
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 4
;   LENGTH: 47
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-215-862-4

  Query Match             100.0%;  Score 47;  DB 14;  Length 47;
  Best Local Similarity   100.0%;  Pred. No. 1.5e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;
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Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 8
US-10-215-862-8
; Sequence 8, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1D2C1
;  CURRENT APPLICATION NUMBER: US/10/215,862
;  CURRENT FILING DATE:  2002-09-24
;  PRIOR APPLICATION NUMBER: US 09/126,663
;  PRIOR FILING DATE: 1998-07-30
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 8
;   LENGTH: 47
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-215-862-8

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  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47


RESULT 9
US-10-240-411-6
; Sequence 6, Application US/10240411
; Publication No. US20040121326A1
; GENERAL INFORMATION:
;  APPLICANT: Harari, Daniel
;  APPLICANT:  Yarden, Yosef
;  TITLE OF INVENTION: NOVEL GROWTH FACTOR WHICH ACTS THROUGH ERB B-4 RECEPTOR TYROSINE
;  TITLE OF INVENTION:  SEQUENCES ENCODING SAME AND USES THEREOF
;  FILE REFERENCE: 01/21918
;  CURRENT APPLICATION NUMBER: US/10/240,411
;  CURRENT FILING DATE:  2003-05-16
;  PRIOR APPLICATION NUMBER: US 09/553,769
;  PRIOR FILING DATE: 2000-04-21
;  NUMBER OF SEQ ID NOS: 20
;  SOFTWARE: PatentIn version 3.0
; SEQ ID NO 6
;   LENGTH: 48
;   TYPE: PRT
;   ORGANISM: Mus musculus
US-10-240-411-6

  Query Match             100.0%;  Score 47;  DB 16;  Length 48;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db          2 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 48


RESULT 10
US-10-609-370-2
; Sequence 2, Application US/10609370
; Publication No. US20040048295A1
; GENERAL INFORMATION:
;  APPLICANT: Young et al.
;  TITLE OF INVENTION: Heregulin-Like Factor
;  FILE REFERENCE: PF383D1
;  CURRENT APPLICATION NUMBER: US/10/609,370
;  CURRENT FILING DATE:  2003-07-01
;  PRIOR APPLICATION NUMBER: 09/097,681
;  PRIOR FILING DATE: 1998-06-16
;  PRIOR APPLICATION NUMBER: 60/049,942
;  PRIOR FILING DATE: 1997-06-17
;  NUMBER OF SEQ ID NOS: 22
;  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 2
;   LENGTH: 157
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-609-370-2

  Query Match             100.0%;  Score 47;  DB 15;  Length 157;
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  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db         31 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 77


RESULT 11
US-09-817-647-7
; Sequence 7, Application US/09817647
; Patent No. US20020082229A1
;  GENERAL INFORMATION:
;       APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;       TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                           Ligands and Uses Therefor
;       NUMBER OF SEQUENCES: 23
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Genentech, Inc.
;            STREET: 1 DNA Way
;            CITY: South San Francisco
;            STATE: California
;            COUNTRY: USA
;            ZIP: 94080
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: WinPatin (Genentech)
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/817,647
;            FILING DATE: 26-Mar-2001
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: 09/107,979
;            FILING DATE: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Conley, Deirdre L.
;            REGISTRATION NUMBER: 36,487
;            REFERENCE/DOCKET NUMBER: P1084R1-2
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 650/225-2066
;            TELEFAX: 650/952-9881
;  INFORMATION FOR SEQ ID NO: 7:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 360 amino acids
;            TYPE: Amino Acid
;            TOPOLOGY: Linear
;       FEATURE:
;            NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;            LOCATION:  1-360
;            IDENTIFICATION METHOD:
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;           OTHER INFORMATION:
;       SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-817-647-7

  Query Match             100.0%;  Score 47;  DB 9;  Length 360;
  Best Local Similarity   100.0%;  Pred. No. 9e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 12
US-09-877-665-7
; Sequence 7, Application US/09877665
; Patent No. US20020164680A1
;   GENERAL INFORMATION:
;       APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
;       TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
;                           Ligands and Uses Therefor
;       NUMBER OF SEQUENCES: 23
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Genentech, Inc.
;            STREET: 1 DNA Way
;            CITY: South San Francisco
;            STATE: California
;            COUNTRY: USA
;            ZIP: 94080
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: WinPatin (Genentech)
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/09/877,665
;            FILING DATE: 08-Jun-2001
;            CLASSIFICATION: <Unknown>
;       PRIOR APPLICATION DATA:
;            APPLICATION NUMBER: US/09/109,206
;            FILING DATE: 30-Jun-1998
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Conley, Deirdre L.
;            REGISTRATION NUMBER: 36,487
;            REFERENCE/DOCKET NUMBER: P1084R1-1
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 650/225-2066
;            TELEFAX: 650/952-9881
;   INFORMATION FOR SEQ ID NO: 7:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 360 amino acids
;            TYPE: Amino Acid
;            TOPOLOGY: Linear
;       FEATURE:
;            NAME/KEY:  hNRG3 extracellular domain/Amino AcidSeq
;            LOCATION:  1-360
;            IDENTIFICATION METHOD:
;            OTHER INFORMATION:
;       SEQUENCE DESCRIPTION: SEQ ID NO: 7:
US-09-877-665-7

  Query Match             100.0%;  Score 47;  DB 9;  Length 360;
  Best Local Similarity   100.0%;  Pred. No. 9e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 13
US-10-136-573A-7
; Sequence 7, Application US/10136573A
; Publication No. US20020161200A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1C2
;  CURRENT APPLICATION NUMBER: US/10/136,573A
;  CURRENT FILING DATE:  2002-04-29
;  PRIOR APPLICATION NUMBER: US 09/480,977
;  PRIOR FILING DATE: 2000-01-11
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 7
;   LENGTH: 360
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-136-573A-7

  Query Match             100.0%;  Score 47;  DB 13;  Length 360;
  Best Local Similarity   100.0%;  Pred. No. 9e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 14
US-10-215-862-7
; Sequence 7, Application US/10215862
; Publication No. US20030036166A1
; GENERAL INFORMATION:
;  APPLICANT: Godowski, Paul J.
;  APPLICANT:  Mark, Melanie Rose
;  APPLICANT:  Zhang, Dong Xiao
;  TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related Ligands and
;  TITLE OF INVENTION:  Uses Therefor
;  FILE REFERENCE: P1084R1D2C1
;  CURRENT APPLICATION NUMBER: US/10/215,862
;  CURRENT FILING DATE:  2002-09-24
;  PRIOR APPLICATION NUMBER: US 09/126,663
;  PRIOR FILING DATE: 1998-07-30
;  PRIOR APPLICATION NUMBER: US 08/899,437
;  PRIOR FILING DATE: 1997-07-24
;  PRIOR APPLICATION NUMBER: US 60/052,019
;  PRIOR FILING DATE: 1997-07-09
;  NUMBER OF SEQ ID NOS: 23
; SEQ ID NO 7
;   LENGTH: 360
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US-10-215-862-7

  Query Match             100.0%;  Score 47;  DB 14;  Length 360;
  Best Local Similarity   100.0%;  Pred. No. 9e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 15
US-09-817-647-3
; Sequence 3, Application US/09817647
; Patent No. US20020082229A1
;   GENERAL INFORMATION:
;       APPLICANT: Godowski, Paul J., Mark, Melanie Rose, Zhang, Dong Xiao
```

; TITLE OF INVENTION: ErbB Receptor-Specific Neuregulin Related
; Ligands and Uses Therefor
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Genentech, Inc.
; STREET: 1 DNA Way
; CITY: South San Francisco
; STATE: California
; COUNTRY: USA
; ZIP: 94080
; COMPUTER READABLE FORM:
; MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: WinPatin (Genentech)
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/817,647
; FILING DATE: 26-Mar-2001
; CLASSIFICATION: <Unknown>
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 09/107,979
; FILING DATE: <Unknown>
; ATTORNEY/AGENT INFORMATION:
; NAME: Conley, Deirdre L.
; REGISTRATION NUMBER: 36,487
; REFERENCE/DOCKET NUMBER: P1084R1-2
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 650/225-2066
; TELEFAX: 650/952-9881
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 362 amino acids
; TYPE: Amino Acid
; TOPOLOGY: Linear
; FEATURE:
; NAME/KEY: mNRG3 extracellular domainAmino acid seq
; LOCATION: 1-362
; IDENTIFICATION METHOD:
; OTHER INFORMATION:
; SEQUENCE DESCRIPTION: SEQ ID NO: 3:
US-09-817-647-3

Query Match 100.0%; Score 47; DB 9; Length 362;
Best Local Similarity 100.0%; Pred. No. 9.1e-43;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
||||||||||||||||||||||||||||||||||||||||||||||||
Db 288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334

Search completed: November 2, 2004, 13:57:13
Job time : 127 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:37:06 ; Search time 38 Seconds
(without alignments)
119.005 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 47
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 283416 seqs, 96216763 residues

Word size : 0

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : PIR_79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	47	100.0	713	2	T44447	neuregulin-3 [impo
2	7	14.9	181	1	R5MX5	ribosomal protein
3	7	14.9	406	2	S59948	aminomethyltransfe
4	7	14.9	407	2	S56660	aminomethyltransfe
5	7	14.9	408	2	H86252	hypothetical prote
6	7	14.9	408	2	S56661	aminomethyltransfe
7	7	14.9	408	2	S38370	aminomethyltransfe
8	7	14.9	1264	2	T19545	hypothetical prote
9	7	14.9	1790	1	MMFFB1	laminin beta-1 cha
10	6	12.8	118	2	JC2568	mraY protein - Rhi
11	6	12.8	149	2	B48083	chromosome segrega
12	6	12.8	157	2	F69592	azlBCD operon tran
13	6	12.8	161	1	A44462	allophycocyanin al
14	6	12.8	161	2	S33623	allophycocyanin al
15	6	12.8	187	2	G71312	probable translati
16	6	12.8	200	2	AE1637	ribosomal protein
17	6	12.8	202	2	F72220	hypothetical prote
18	6	12.8	212	2	H69459	hypothetical prote
19	6	12.8	247	2	H83970	phospho-N-acetylmu
20	6	12.8	260	2	T06326	malate dehydrogena
21	6	12.8	263	2	G98308	hypothetical prote
22	6	12.8	291	2	AD2974	conserved hypothet
23	6	12.8	300	2	G75436	conserved hypothet
24	6	12.8	306	1	JQ1395	phosphoribosylamin
25	6	12.8	313	2	A64069	1-phosphofructokin
26	6	12.8	313	2	T48057	proline-rich prote
27	6	12.8	313	2	T52077	proline-rich prote
28	6	12.8	321	2	A89890	phospho-N-muramic
29	6	12.8	324	1	C47691	phospho-N-acetylmu
30	6	12.8	329	2	D87291	hypothetical prote
31	6	12.8	334	2	B72033	conserved hypothet
32	6	12.8	334	2	C86593	CT566 hypothetical
33	6	12.8	335	2	E69990	proteinase IV homo
34	6	12.8	337	2	AI1272	proteinase homolog
35	6	12.8	337	2	AB1636	proteinases homolo
36	6	12.8	353	1	E64581	phospho-N-acetylmu
37	6	12.8	353	2	B71930	phospho-n-acetylmu
38	6	12.8	358	1	PASPC	fructose-bisphosph
39	6	12.8	361	2	B82763	phospho-N-acetylmu
40	6	12.8	365	2	AD0111	aminomethyltransfe
41	6	12.8	366	2	G64574	hypothetical prote
42	6	12.8	379	2	G81712	1-deoxy-D-xylulose
43	6	12.8	404	2	C83072	conserved hypothet
44	6	12.8	405	2	AF2422	N-acyl-L-amino aci
45	6	12.8	415	2	T09085	fructose-bisphosph

ALIGNMENTS

RESULT 1
T44447
neuregulin-3 [imported] - mouse
C;Species: Mus musculus (house mouse)
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Accession: T44447
R;Zhang, D.; Sliwkowski, M.X.; Mark, M.; Frantz, G.; Akita, R.; Sun, Y.; Hillan, K.; Cro
Proc. Natl. Acad. Sci. U.S.A. 94, 9562-9567, 1997
A;Title: Neuregulin-3 (NRG3): A novel neural tissue-enriched protein that binds and acti
A;Reference number: Z22773; MUID:97420720; PMID:9275162
A;Accession: T44447
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-713 <ZHA>
A;Cross-references: UNIPROT:O35181; EMBL:AF010130; NID:g2429163; PIDN:AAB70914.1; PID:g24
C;Genetics:
A;Gene: NRG3
C;Superfamily: mouse neuregulin-3

Query Match 100.0%; Score 47; DB 2; Length 713;
Best Local Similarity 100.0%; Pred. No. 2.1e-42;
Matches 47; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db 288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334

RESULT 2
R5MX5
ribosomal protein L5 - Methanococcus vannielii
C;Species: Methanococcus vannielii
C;Date: 31-Mar-1991 #sequence_revision 31-Mar-1991 #text_change 09-Jul-2004
C;Accession: S05617
R;Auer, J.; Spicker, G.; Boeck, A.
J. Mol. Biol. 209, 21-36, 1989
A;Title: Organization and structure of the Methanococcus transcriptional unit homologous
S ribosomes.
A;Reference number: S05611; MUID:90040717; PMID:2530355
A;Accession: S05617
A;Molecule type: DNA
A;Residues: 1-181 <AUE>
A;Cross-references: UNIPROT:P14029; EMBL:X16720; NID:g44754; PIDN:CAA34693.1; PID:g44761
C;Superfamily: ribosomal protein L5/L11
C;Keywords: protein biosynthesis; ribosome

Query Match 14.9%; Score 7; DB 1; Length 181;
Best Local Similarity 100.0%; Pred. No. 3.9;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 21 VIETLTG 27
|||||||

Db 39 VIETLTG 45

RESULT 3
S59948
aminomethyltransferase (EC 2.1.2.10) precursor - potato
N;Alternate names: glycine cleavage system protein T; glycine decarboxylase multienzyme
C;Species: Solanum tuberosum (potato)
C;Date: 15-Feb-1996 #sequence_revision 01-Mar-1996 #text_change 09-Jul-2004
C;Accession: S59948; S40219
R;Kopriva, S.; Bauwe, H.
Plant Physiol. 104, 1079-1080, 1994
A;Title: T-protein of glycine decarboxylase from Solanum tuberosum.
A;Reference number: S59948; MUID:94218396; PMID:8165246
A;Accession: S59948
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: mRNA
A;Residues: 1-406 <KOP>
A;Cross-references: UNIPROT:P54260; EMBL:Z25862; NID:g438253; PIDN:CAA81081.1; PID:g4382
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1993
C;Genetics:
A;Genome: nuclear
C;Superfamily: aminomethyltransferase
C;Keywords: mitochondrion; transferase
F;1-29/Domain: transit peptide (mitochondrion) #status predicted <TNP>
F;30-406/Product: aminomethyltransferase #status predicted <MAT>

Query Match 14.9%; Score 7; DB 2; Length 406;
Best Local Similarity 100.0%; Pred. No. 7.7;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 5 CRDKDLA 11
|||||||
Db 150 CRDKDLA 156

RESULT 4
S56660
aminomethyltransferase (EC 2.1.2.10) precursor - Flaveria pringlei
N;Alternate names: glycine cleavage system protein T
C;Species: Flaveria pringlei
C;Date: 27-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 09-Jul-2004
C;Accession: S56660; S40217
R;Kopriva, S.; Turner, S.R.; Rawsthorne, S.; Bauwe, H.
Plant Mol. Biol. 27, 1215-1220, 1995
A;Title: T-protein of the glycine decarboxylase multienzyme complex: evidence for partia
A;Reference number: S56660; MUID:95284371; PMID:7766903
A;Accession: S56660
A;Status: preliminary; nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-407 <KOP>
A;Cross-references: UNIPROT:P49363; EMBL:Z25858; NID:g438004; PIDN:CAA81077.1; PID:g4380
C;Superfamily: aminomethyltransferase
C;Keywords: transferase

Query Match 14.9%; Score 7; DB 2; Length 407;
Best Local Similarity 100.0%; Pred. No. 7.7;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 5 CRDKDLA 11
|||||||
Db 150 CRDKDLA 156

RESULT 5
H86252
hypothetical protein [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 09-Jul-2004
C;Accession: H86252
R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso,
Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.;
ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.
C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali,
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, I
ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; PMID:11130712
A;Accession: H86252
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-408 <STO>
A;Cross-references: UNIPROT:O65396; GB:AE005172; NID:g3157944; PIDN:AAC17627.1; GSPDB:GN
C;Genetics:
A;Map position: 1
C;Superfamily: aminomethyltransferase

Query Match 14.9%; Score 7; DB 2; Length 408;
Best Local Similarity 100.0%; Pred. No. 7.7;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 5 CRDKDLA 11
|||||||
Db 151 CRDKDLA 157

RESULT 6
S56661
aminomethyltransferase (EC 2.1.2.10) precursor - garden pea
N;Alternate names: glycine cleavage system protein T
C;Species: Pisum sativum (garden pea)
C;Date: 27-Oct-1995 #sequence_revision 03-Nov-1995 #text_change 09-Jul-2004
C;Accession: S56661; S56733; S40260
R;Kopriva, S.; Turner, S.R.; Rawsthorne, S.; Bauwe, H.
Plant Mol. Biol. 27, 1215-1220, 1995
A;Title: T-protein of the glycine decarboxylase multienzyme complex: evidence for partia
A;Reference number: S56660; MUID:95284371; PMID:7766903
A;Accession: S56661
A;Status: preliminary; nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-408 <KOP>
A;Cross-references: UNIPROT:P49364; EMBL:Z25861; NID:g438216; PIDN:CAA81080.1; PID:g4382
A;Accession: S56733
A;Status: preliminary
A;Molecule type: protein
A;Residues: 31-39 <KO2>
C;Superfamily: aminomethyltransferase
C;Keywords: transferase

Query Match 14.9%; Score 7; DB 2; Length 408;
Best Local Similarity 100.0%; Pred. No. 7.7;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 5 CRDKDLA 11
|||||||
Db 151 CRDKDLA 157

RESULT 7
S38370
aminomethyltransferase (EC 2.1.2.10) precursor - garden pea
N;Alternate names: glycine cleavage system protein T
C;Species: Pisum sativum (garden pea)
C;Date: 27-May-1994 #sequence_revision 01-Dec-1995 #text_change 09-Jul-2004
C;Accession: S38370
R;Bourguignon, J.; Vauclare, P.; Merand, V.; Forest, E.; Neuburger, M.; Douce, R.
Eur. J. Biochem. 217, 377-386, 1993
A;Title: Glycine decarboxylase complex from higher plants. Molecular cloning, tissue di
A;Reference number: S38370; MUID:94039061; PMID:8223576
A;Accession: S38370
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-408 <BOU>

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A;Cross-references: UNIPROT:P49364; EMBL:X74793; NID:g407474; PIDN:CAA52800.1; PID:g4074
C;Superfamily: aminomethyltransferase
C;Keywords: transferase

  Query Match             14.9%;  Score 7;  DB 2;  Length 408;
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  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db        151 CRDKDLA 157


RESULT 8
T19545
hypothetical protein C29A12.4 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T19545
R;Wilkinson, J.
submitted to the EMBL Data Library, June 1996
A;Reference number: Z19140
A;Accession: T19545
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-1264 <WIL>
A;Cross-references: UNIPROT:Q18291; EMBL:Z73970; PIDN:CAA98243.1; GSPDB:GN00023; CESP:C2
A;Experimental source: clone C29A12
C;Genetics:
A;Gene: CESP:C29A12.4
A;Map position: 5
A;Introns: 40/2; 92/2; 113/3; 169/3; 203/1; 227/3; 266/1; 319/3; 437/1; 636/1; 668/3; 70

  Query Match             14.9%;  Score 7;  DB 2;  Length 1264;
  Best Local Similarity   100.0%;  Pred. No. 20;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          13 CLNDGEC 19
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Db        236 CLNDGEC 242


RESULT 9
MMFFB1
laminin beta-1 chain precursor - fruit fly (Drosophila melanogaster)
N;Alternate names: laminin chain B1
C;Species: Drosophila melanogaster
C;Date: 30-Jun-1991 #sequence_revision 30-Jun-1991 #text_change 09-Jul-2004
C;Accession: A28783; S14462; B28783
R;Montell, D.J.; Goodman, C.S.
Cell 53, 463-473, 1988
A;Title: Drosophila substrate adhesion molecule: sequence of laminin B1 chain reveals do
A;Reference number: A28783; MUID:88210471; PMID:3365769
A;Accession: A28783
A;Molecule type: mRNA
A;Residues: 1-1790 <MON1>
A;Cross-references: UNIPROT:P11046; EMBL:M19525
R;Montell, D.J.; Goodman, C.S.
submitted to the EMBL Data Library, June 1988
A;Description: Drosophila substrate adhesion molecule: sequence of laminin B1 chain reve
A;Reference number: S14462
A;Accession: S14462
A;Molecule type: mRNA
A;Residues: 1-667,'L',669-725,'VT',728-947,950-1790 <MON2>
A;Cross-references: EMBL:M19525; NID:g157801; PIDN:AAA28663.1; PID:g157802
C;Genetics:
A;Gene: lamB1
A;Cross-references: FlyBase:FBgn0002527
A;Map position: 2L 28D
C;Complex: Laminins are trimers of an alpha-type, a beta-type, and a gamma-type laminin
C;Function:
A;Description: interact with cells and with other basement membrane proteins to promote
C;Superfamily: laminin beta-1 chain; laminin-type EGF-like homology
C;Keywords: basement membrane; calcium binding; cell binding; coiled coil; extracellular
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-1790/Product: laminin beta-1 chain #status predicted <MAT>
F;27-288/Domain: VI <DOM6>
F;289-561/Domain: V <DOM5>
F;290-354/Domain: laminin-type EGF-like homology <LE01>
F;357-417/Domain: laminin-type EGF-like homology <LE02>
F;420-477/Domain: laminin-type EGF-like homology <LE03>
F;480-528/Domain: laminin-type EGF-like homology <LE04>
F;531-561/Domain: laminin-type EGF-like homology #status atypical <LE05>
F;562-789/Domain: IV <DOM4>
F;643-645/Region: cell attachment (R-G-D) motif
F;790-1189/Domain: III <DOM3>
F;791-836/Domain: laminin-type EGF-like homology <LE06>
F;839-882/Domain: laminin-type EGF-like homology <LE07>
F;885-932/Domain: laminin-type EGF-like homology <LE08>
F;935-990/Domain: laminin-type EGF-like homology <LE09>
F;968-972/Region: cell adhesion #status predicted
F;993-1042/Domain: laminin-type EGF-like homology <LE10>
F;1045-1093/Domain: laminin-type EGF-like homology <LE11>
F;1096-1141/Domain: laminin-type EGF-like homology <LE12>
F;1144-1188/Domain: laminin-type EGF-like homology <LE13>
F;1190-1407/Domain: II <DOM2>
F;1408-1434/Domain: alpha <ALP>
F;1435-1790/Domain: I <DOM1>
F;51-56/Disulfide bonds: #status predicted
F;140,203,234,489,593,1053,1248,1303,1332,1343,1475,1495,1517,1583,1646,1705/Binding site
F;1191,1194,1788/Disulfide bonds: interchain #status predicted

  Query Match             14.9%;  Score 7;  DB 1;  Length 1790;
  Best Local Similarity   100.0%;  Pred. No. 27;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          39 QGVRCDQ 45
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Db        1073 QGVRCDQ 1079


RESULT 10
JC2568
mraY protein - Rhizobium meliloti (fragment)
C;Species: Rhizobium meliloti
C;Date: 13-Jun-1995 #sequence_revision 14-Jul-1995 #text_change 03-Nov-2000
C;Accession: JC2568
R;Leach, F.; Wacks, D.B.; Signer, E.R.
Gene 148, 87-90, 1994
A;Title: Rhizobium meliloti homologs of Escherichia coli mur genes.
A;Reference number: JC2567; MUID:95011665; PMID:7926844
A;Accession: JC2568
A;Molecule type: DNA
A;Residues: 1-118 <LEA>
A;Cross-references: GB:L25875
C;Genetics:
A;Gene: mraY
C;Superfamily: phospho-N-acetylmuramoyl-pentapeptide-transferase

  Query Match             12.8%;  Score 6;  DB 2;  Length 118;
  Best Local Similarity   100.0%;  Pred. No. 32;
  Matches    6;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          20 FVIETL 25
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Db          69 FVIETL 74


RESULT 11
B48083
chromosome segregation protein CSE2 - yeast (Saccharomyces cerevisiae)
N;Alternate names: protein N2046; protein YNR010w
C;Species: Saccharomyces cerevisiae
C;Date: 26-May-1994 #sequence_revision 26-May-1994 #text_change 09-Jul-2004
C;Accession: B48083; S45132; S48347; S63336; S43944
R;Xiao, Z.; McGrew, J.T.; Schroeder, A.J.; Fitzgerald-Hayes, M.
```

Mol. Cell. Biol. 13, 4691-4702, 1993
A;Title: CSE1 and CSE2, two new genes required for accurate mitotic chromosome segregati
A;Reference number: A48083; MUID:93330263; PMID:8336709
A;Accession: B48083
A;Molecule type: DNA
A;Residues: 1-149 <XIA>
A;Cross-references: UNIPROT:P33308; GB:L14839; NID:g349590; PIDN:AAA34532.1; PID:g349591
R;Verhasselt, P.; Aert, R.; Voet, M.; Volckaert, G.
submitted to the EMBL Data Library, January 1994
A;Description: Twelve open reading frames revealed on the 23.6 kbp segment flanking the
A;Reference number: S45119
A;Accession: S45132
A;Molecule type: DNA
A;Residues: 1-149 <VER>
A;Cross-references: EMBL:X77395; NID:g496717; PIDN:CAA54578.1; PID:g496726
R;Verhasselt, P.; Aert, R.; Voet, M.; Volckaert, G.
Yeast 10, 1355-1361, 1994
A;Title: Twelve open reading frames revealed in the 23.6 kb segment flanking the centrom
A;Reference number: S48338; MUID:95208356; PMID:7900425
A;Accession: S48347
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-149 <VE2>
A;Cross-references: EMBL:X77395; NID:g496717; PIDN:CAA54578.1; PID:g496726
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, January 1994
R;Aert, R.; Verhasselt, P.; Voet, M.; Volckaert, G.
submitted to the Protein Sequence Database, April 1996
A;Reference number: S62910
A;Accession: S63336
A;Molecule type: DNA
A;Residues: 1-149 <AER>
A;Cross-references: EMBL:Z71625; NID:g1302485; PIDN:CAA96287.1; PID:g1302486; MIPS:YNR01
A;Experimental source: strain S288C
C;Genetics:
A;Gene: SGD:CSE2
A;Cross-references: SGD:S0005293; MIPS:YNR010w
A;Map position: 14R
C;Superfamily: Saccharomyces chromosome segregation protein CSE2
C;Keywords: DNA binding; leucine zipper; nucleus

Query Match 12.8%; Score 6; DB 2; Length 149;
Best Local Similarity 100.0%; Pred. No. 39;
Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 23 ETLTGS 28
||||||
Db 88 ETLTGS 93

RESULT 12
F69592
azlBCD operon transcription repressor azlB - Bacillus subtilis
C;Species: Bacillus subtilis
C;Date: 05-Dec-1997 #sequence_revision 05-Dec-1997 #text_change 09-Jul-2004
C;Accession: F69592; T44776
R;Kunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Berter
C.; Bron, S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; Cho
A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, E.
Nature 390, 249-256, 1997
A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galler
iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F.
Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois,
A;Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Maueel
y, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portetelle
Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon,
A;Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Seror
akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchiyama,
T.; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, K
A;Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.
A;Title: The complete genome sequence of the Gram-positive bacterium Bacillus subtilis.
A;Reference number: A69580; MUID:98044033; PMID:9384377
A;Accession: F69592
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-157 <KUN>
A;Cross-references: UNIPROT:O07920; GB:Z99117; GB:AL009126; NID:g2634966; PIDN:CAB14613.
A;Experimental source: strain 168
R;Belitsky, B.R.; Gustafsson, M.C.U.; Sonenshein, A.L.; von Wachenfeldt, C.
J. Bacteriol. 179, 5448-5457, 1997
A;Title: An lrp-like gene of Bacillus subtilis involved in branched-chain amino acid tra
A;Reference number: Z22837; MUID:97431495; PMID:9287000
A;Accession: T44776
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-157 <BEL>
A;Cross-references: EMBL:Y11043; NID:g1926275; PIDN:CAA71939.1; PID:g1926280
A;Experimental source: strain 1A1
C;Genetics:
A;Gene: azlB
C;Superfamily: regulatory protein asnC

Query Match 12.8%; Score 6; DB 2; Length 157;
Best Local Similarity 100.0%; Pred. No. 41;
Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 24 TLTGSH 29
||||||
Db 101 TLTGSH 106

RESULT 13
A44462
allophycocyanin alpha chain - Synechocystis sp. (strain PCC 6803)
C;Species: Synechocystis sp.
A;Variety: PCC 6803
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004
C;Accession: A44462; S75012
R;Su, X.; Fraenkel, P.G.; Bogorad, L.
J. Biol. Chem. 267, 22944-22950, 1992
A;Title: Excitation energy transfer from phycocyanin to chlorophyll in an apcA-defective
A;Reference number: A44462; MUID:93054612; PMID:1429645
A;Accession: A44462
A;Molecule type: mRNA
A;Residues: 1-161 <SU1>
A;Cross-references: UNIPROT:Q01951; GB:M77135; NID:g154453; PIDN:AAA27276.1; PID:g154454
A;Experimental source: PCC 6803
A;Note: sequence extracted from NCBI backbone (NCBIP:118109)
R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima, N.
o, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; Watanabe, A.; Yamada, M.; Yasuda
DNA Res. 3, 109-136, 1996
A;Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocysti
s.
A;Reference number: S74322; MUID:97061201; PMID:8905231
A;Accession: S75012
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-161 <KAN>
A;Cross-references: EMBL:D90910; GB:AB001339; NID:g1652956; PIDN:BAA17874.1; PID:g16529
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996
C;Genetics:
A;Gene: apcA
C;Superfamily: phycocyanin
C;Keywords: chromoprotein; photosynthesis; phycocyanobilin
F;81/Binding site: phycocyanobilin (Cys) (covalent) #status predicted

Query Match 12.8%; Score 6; DB 1; Length 161;
Best Local Similarity 100.0%; Pred. No. 41;
Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 23 ETLTGS 28
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Db 41 ETLTGS 46

RESULT 14
S33623

allophycocyanin alpha chain - Synechocystis sp. (strain PCC 6714)
C;Species: Synechocystis sp.
A;Variety: PCC 6714
C;Date: 19-Mar-1997 #sequence_revision 09-May-1997 #text_change 09-Jul-2004
C;Accession: S33623
R;DiMagno, L.; Haselkorn, R.
Plant Mol. Biol. 21, 835-845, 1993
A;Title: Isolation and characterization of the genes encoding allophycocyanin subunits a
A;Reference number: S33623; MUID:93222481; PMID:8467079
A;Accession: S33623
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-161 <DIM>
A;Cross-references: UNIPROT:Q02923; EMBL:L02308; NID:g154449; PIDN:AAA69682.1; PID:g1544
A;Experimental source: PCC 6714
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, September 1992
C;Genetics:
A;Gene: apcA
C;Superfamily: phycocyanin
C;Keywords: chromoprotein; photosynthesis; phycocyanobilin
F;81/Binding site: phycocyanobilin (Cys) (covalent) #status predicted

  Query Match 12.8%; Score 6; DB 2; Length 161;
  Best Local Similarity 100.0%; Pred. No. 41;
  Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 23 ETLTGS 28
||||||
Db 41 ETLTGS 46

RESULT 15
G71312
probable translation elongation factor P (efp) - syphilis spirochete
C;Species: Treponema pallidum subsp. pallidum (syphilis spirochete)
C;Date: 24-Jul-1998 #sequence_revision 24-Jul-1998 #text_change 09-Jul-2004
C;Accession: G71312
R;Fraser, C.M.; Norris, S.J.; Weinstock, G.M.; White, O.; Sutton, G.G.; Dodson, R.; Gwin
rson, J.; Khalak, H.; Richardson, D.; Howell, J.K.; Chidambaram, M.; Utterback, T.; McDo
they, L.; Weidman, J.; Smith, H.O.; Venter, J.C.
Science 281, 375-388, 1998
A;Title: Complete genome sequence of Treponema pallidum, the syphilis spirochete.
A;Reference number: A71250; MUID:98332770; PMID:9665876
A;Accession: G71312
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-187 <COL>
A;Cross-references: UNIPROT:O83537; GB:AE001228; GB:AE000520; NID:g3322816; PIDN:AAC6551
A;Experimental source: strain Nichols
C;Genetics:
A;Gene: TP0525
C;Superfamily: translation elongation factor EF-P

  Query Match 12.8%; Score 6; DB 2; Length 187;
  Best Local Similarity 100.0%; Pred. No. 47;
  Matches 6; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 16 DGECFV 21
||||||
Db 76 DGECFV 81

Search completed: November 2, 2004, 13:46:13
Job time : 40 secs

GenCore version 5.1.6

OM protein - protein search, using sw model

Run on: November 2, 2004, 13:29:11 ; Search time 193 Seconds
(without alignments)
140.117 Million cell updates/sec

Title: US-09-107-979-4
Perfect score: 47
Sequence: 1 HFKPCRDKDLAYCLNDGECF.....SHKHCRCKEGYQGVRCDQFL 47

Scoring table: OLIGO
Gapop 60.0 , Gapext 60.0

Searched: 1825181 seqs, 575374646 residues

Word size : 0

Total number of hits satisfying chosen parameters: 1825181

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

Database : UniProt_02:*
1: uniprot_sprot:*
2: uniprot_trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	47	100.0	713	1	NRG3_MOUSE	O35181 mus musculu
2	47	100.0	720	1	NRG3_HUMAN	P56975 homo sapien
3	7	14.9	71	2	Q74FY8	Q74fy8 geobacter s
4	7	14.9	71	2	AAR33796	Aar33796 geobacter
5	7	14.9	127	2	Q947L6	Q947l6 beta vulgar
6	7	14.9	181	1	RL5_METVA	P14029 methanococc
7	7	14.9	186	2	Q86DG8	Q86dg8 heterodera
8	7	14.9	368	2	Q8LNG9	Q8lng9 oryza sativ
9	7	14.9	401	2	Q7Q1J6	Q7q1j6 anopheles g
10	7	14.9	403	1	GCST_MOUSE	Q8cfa2 mus musculu
11	7	14.9	406	1	GCST_SOLTU	P54260 solanum tub
12	7	14.9	406	2	Q6C340	Q6c340 yarrowia li
13	7	14.9	407	1	GCST_FLAAN	O49849 flaveria an
14	7	14.9	407	1	GCST_FLAPR	P49363 flaveria pr
15	7	14.9	407	1	GCST_FLATR	O23936 flaveria tr
16	7	14.9	408	1	GCST_ARATH	O65396 arabidopsis
17	7	14.9	408	1	GCST_PEA	P49364 pisum sativ
18	7	14.9	408	2	Q7XPR2	Q7xpr2 oryza sativ
19	7	14.9	435	2	Q981J4	Q981j4 rhizobium l
20	7	14.9	509	2	Q6UXI9	Q6uxi9 homo sapien
21	7	14.9	509	2	AAQ88702	Aaq88702 homo sapi
22	7	14.9	644	2	Q7QWT5	Q7qwt5 giardia lam
23	7	14.9	944	2	Q6N7N7	Q6n7n7 rhodopseudo
24	7	14.9	944	2	CAE27661	Cae27661 rhodopseu
25	7	14.9	1026	2	Q8SWY0	Q8swy0 drosophila
26	7	14.9	1560	2	Q18291	Q18291 caenorhabdi
27	7	14.9	1790	1	LMB1_DROME	P11046 drosophila
28	6	12.8	77	2	Q6UCQ8	Q6ucq8 uncultured
29	6	12.8	77	2	AAR05332	Aar05332 unculture
30	6	12.8	96	2	Q8CSS4	Q8css4 staphylococ
31	6	12.8	104	2	Q9BDC5	Q9bdc5 macaca fasc
32	6	12.8	108	2	Q6JGX3	Q6jgx3 uncultured
33	6	12.8	108	2	Q6JGY1	Q6jgy1 uncultured
34	6	12.8	108	2	AAS57675	Aas57675 unculture
35	6	12.8	108	2	AAS57683	Aas57683 unculture
36	6	12.8	130	2	Q8P663	Q8p663 xanthomonas
37	6	12.8	148	2	Q6ZCX4	Q6zcx4 oryza sativ
38	6	12.8	148	2	Q8GXW3	Q8gxw3 arabidopsis
39	6	12.8	148	2	Q6D9T1	Q6d9t1 erwinia car
40	6	12.8	148	2	BAC99531	Bac99531 oryza sat
41	6	12.8	148	2	BAC99402	Bac99402 oryza sat
42	6	12.8	149	1	CSE2_YEAST	P33308 saccharomyc
43	6	12.8	149	2	AAS56748	Aas56748 saccharom
44	6	12.8	155	2	Q8RYI7	Q8ryi7 oryza sativ
45	6	12.8	157	1	AZLB_BACSU	O07920 bacillus su

ALIGNMENTS

```
RESULT 1
NRG3_MOUSE
ID   NRG3_MOUSE      STANDARD;      PRT;   713 AA.
AC   O35181;
DT   16-OCT-2001 (Rel. 40, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-
DE   3)].
GN   Name=Nrg3;
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Brain;
RX   MEDLINE=97420720; PubMed=9275162;
RA   Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y.,
RA   Hillan K., Crowley C., Brush J., Godowski P.J.;
RT   "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that
RT   binds and activates ErbB4.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC   -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor.
CC       Binding results in ligand-stimulated tyrosine phosphorylation and
CC       activation of the receptor. Does not bind to the EGF receptor,
CC       ERBB2 or ERBB3 receptors.
CC   -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC       a proteolytically released soluble growth factor form. The
CC       membrane-bound form does not seem to be active (By similarity).
CC   -!- TISSUE SPECIFICITY: Expressed in sympathetic, motor, and sensory
CC       neurons.
CC   -!- DEVELOPMENTAL STAGE: Detected as early as 11 dpc. At 13 dpc
CC       detected mainly in the nervous system. At 16 dpc, detected in the
CC       brain, spinal cord, trigeminal, vestibular-cochlear, and spinal
CC       ganglia. In adults, expressed in spinal cord, and numerous brain
CC       regions.
CC   -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC       of trafficking and proteolytic processing. Regulation of the
CC       proteolytic processing involves initial intracellular domain
CC       dimerization (By similarity).
CC   -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC       domain (By similarity).
CC   -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC       external face leads to the release of the soluble growth factor
CC       form (By similarity).
CC   -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC       similarity).
CC   -!- SIMILARITY: Belongs to the neuregulin family.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
```

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CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; AF010130; AAB70914.1; -.
DR   PIR; T44447; T44447.
DR   HSSP; P01133; 1JL9.
DR   MGD; MGI:1097165; Nrg3.
DR   GO; GO:0005515; F:protein binding; IPI.
DR   GO; GO:0007243; P:protein kinase cascade; IDA.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
KW   EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT   CHAIN         1    713       Pro-neuregulin-3, membrane-bound form.
FT   CHAIN         1    361       Neuregulin-3.
FT   DOMAIN        1    362       Extracellular (Potential).
FT   TRANSMEM    363    383       Internal signal sequence (Potential).
FT   DOMAIN      384    713       Cytoplasmic (Potential).
FT   DOMAIN      105    287       Ser/Thr-rich.
FT   DOMAIN      288    331       EGF-like.
FT   DOMAIN       13     21       Poly-Ala.
FT   DOMAIN       26     34       Poly-Ala.
FT   DOMAIN      127    135       Poly-Thr.
FT   DOMAIN      250    253       Poly-Ala.
FT   DOMAIN      254    263       Poly-Ser.
FT   DOMAIN      264    267       Poly-Thr.
FT   DISULFID    292    306       By similarity.
FT   DISULFID    300    319       By similarity.
FT   DISULFID    321    330       By similarity.
SQ   SEQUENCE   713 AA;  77369 MW;  9F7D1D5E7FC8DCF0 CRC64;

  Query Match             100.0%;  Score 47;  DB 1;  Length 713;
  Best Local Similarity   100.0%;  Pred. No. 5.3e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
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Db        288 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 334


RESULT 2
NRG3_HUMAN
ID   NRG3_HUMAN     STANDARD;      PRT;   720 AA.
AC   P56975;
DT   16-OCT-2001 (Rel. 40, Created)
DT   16-OCT-2001 (Rel. 40, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Pro-neuregulin-3 precursor (Pro-NRG3) [Contains: Neuregulin-3 (NRG-
DE   3)].
GN   Name=NRG3;
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Fetal brain;
RX   MEDLINE=97420720; PubMed=9275162;
RA   Zhang D., Sliwkowski M.X., Mark M., Frantz G., Akita R., Sun Y.,
RA   Hillan K., Crowley C., Brush J., Godowski P.J.;
RT   "Neuregulin-3 (NRG3): a novel neural tissue-enriched protein that
RT   binds and activates ErbB4.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:9562-9567(1997).
CC   -!- FUNCTION: Direct ligand for the ERBB4 tyrosine kinase receptor.
CC       Binding results in ligand-stimulated tyrosine phosphorylation and
CC       activation of the receptor. Does not bind to the EGF receptor,
CC       ERBB2 or ERBB3 receptors.
CC   -!- SUBCELLULAR LOCATION: Exists as an type I membrane protein and as
CC       a proteolytically released soluble growth factor form. The
CC       membrane-bound form does not seem to be active (By similarity).
CC   -!- TISSUE SPECIFICITY: Highly expressed in most regions of the brain
CC       with the exception of corpus callosum. Expressed at lower level in
CC       testis. Not detected in heart, placenta, lung, liver, skeletal
CC       muscle, kidney, pancreas, spleen, thymus, prostate, ovary, small
CC       intestine, colon and peripheral blood leukocytes.
CC   -!- DOMAIN: The cytoplasmic domain may be involved in the regulation
CC       of trafficking and proteolytic processing. Regulation of the
CC       proteolytic processing involves initial intracellular domain
CC       dimerization (By similarity).
CC   -!- DOMAIN: ERBB receptor binding is elicited entirely by the EGF-like
CC       domain (By similarity).
CC   -!- PTM: Proteolytic cleavage close to the plasma membrane on the
CC       external face leads to the release of the soluble growth factor
CC       form (By similarity).
CC   -!- PTM: Extensive glycosylation precedes the proteolytic cleavage (By
CC       similarity).
CC   -!- SIMILARITY: Belongs to the neuregulin family.
CC   -!- SIMILARITY: Contains 1 EGF-like domain.
DR   HSSP; P01133; 1JL9.
DR   Genew; HGNC:7999; NRG3.
DR   MIM; 605533; -.
DR   GO; GO:0005576; C:extracellular; NAS.
DR   GO; GO:0005887; C:integral to plasma membrane; NAS.
DR   GO; GO:0008083; F:growth factor activity; NAS.
DR   GO; GO:0030297; F:transmembrane receptor protein tyrosine kin. . .; NAS.
DR   GO; GO:0001558; P:regulation of cell growth; NAS.
DR   GO; GO:0007170; P:transmembrane receptor protein tyrosine kin. . .; NAS.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR006209; EGF_like.
DR   InterPro; IPR006210; IEGF.
DR   InterPro; IPR002154; Neuregulin.
DR   Pfam; PF00008; EGF; 1.
DR   Pfam; PF02158; Neuregulin; 1.
DR   SMART; SM00181; EGF; 1.
DR   PROSITE; PS00022; EGF_1; 1.
DR   PROSITE; PS01186; EGF_2; 1.
DR   PROSITE; PS50026; EGF_3; 1.
KW   EGF-like domain; Growth factor; Multigene family; Transmembrane.
FT   CHAIN         1    720       Pro-neuregulin-3, membrane-bound form.
FT   CHAIN         1    359       Neuregulin-3.
FT   DOMAIN        1    360       Extracellular (Potential).
FT   TRANSMEM    361    381       Internal signal sequence (Potential).
FT   DOMAIN      382    720       Cytoplasmic (Potential).
FT   DOMAIN      105    285       Ser/Thr-rich.
FT   DOMAIN      286    329       EGF-like.
FT   DOMAIN        5      8       Poly-Ala.
FT   DOMAIN       13     21       Poly-Ala.
FT   DOMAIN       26     34       Poly-Ala.
FT   DOMAIN      127    135       Poly-Thr.
FT   DOMAIN      252    260       Poly-Ser.
FT   DOMAIN      262    265       Poly-Thr.
FT   DISULFID    290    304       By similarity.
FT   DISULFID    298    317       By similarity.
FT   DISULFID    319    328       By similarity.
SQ   SEQUENCE   720 AA;  77900 MW;  A4D6F10DDB95A693 CRC64;

  Query Match             100.0%;  Score 47;  DB 1;  Length 720;
  Best Local Similarity   100.0%;  Pred. No. 5.3e-43;
  Matches   47;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 47
              |||||||||||||||||||||||||||||||||||||||||||||||
Db        286 HFKPCRDKDLAYCLNDGECFVIETLTGSHKHCRCKEGYQGVRCDQFL 332


RESULT 3
Q74FY8
ID   Q74FY8      PRELIMINARY;      PRT;    71 AA.
AC   Q74FY8;
```

```
DT   05-JUL-2004 (TrEMBLrel. 27, Created)
DT   05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   S4 domain protein.
GN   ORFNames=GSU0464;
OS   Geobacter sulfurreducens.
OC   Bacteria; Proteobacteria; Deltaproteobacteria; Desulfuromonadales;
OC   Geobacteraceae; Geobacter.
OX   NCBI_TaxID=35554;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=PCA / ATCC 51573;
RX   PubMed=14671304; DOI=10.1126/science.1088727;
RA   Methe B.A., Nelson K.E., Eisen J.A., Paulsen I.T., Nelson W.C.,
RA   Heidelberg J.F., Wu D., Wu M., Ward N.L., Beanan M.J., Dodson R.J.,
RA   Madupu R., Brinkac L.M., Daugherty S.C., DeBoy R.T., Durkin A.S.,
RA   Gwinn M.L., Kolonay J.F., Sullivan S.A., Haft D.H., Selengut J.,
RA   Davidsen T.M., Zafar N., White O., Tran B., Romero C., Forberger H.A.,
RA   Weidman J.F., Khouri H.M., Feldblyum T.V., Utterback T.R.,
RA   Van Aken S.E., Lovley D.R., Fraser C.M.;
RT   "Genome of Geobacter sulfurreducens: metal reduction in subsurface
RT   environments.";
RL   Science 302:1967-1969(2003).
DR   EMBL; AE017180; AAR33796.1; -.
DR   TIGR; GSU0464; -.
DR   InterPro; IPR002942; S4.
DR   Pfam; PF01479; S4; 1.
DR   SMART; SM00363; S4; 1.
DR   PROSITE; PS50889; S4; 1.
SQ   SEQUENCE   71 AA;  7704 MW;  9C0D6C2C84E02AD9 CRC64;

  Query Match             14.9%;  Score 7;  DB 2;  Length 71;
  Best Local Similarity   100.0%;  Pred. No. 7.9;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         17 GECFVIE 23
              |||||||
Db         65 GECFVIE 71


RESULT 4
AAR33796
ID   AAR33796    PRELIMINARY;      PRT;    71 AA.
AC   AAR33796;
DT   02-MAR-2004 (TrEMBLrel. 27, Created)
DT   02-MAR-2004 (TrEMBLrel. 27, Last sequence update)
DT   02-MAR-2004 (TrEMBLrel. 27, Last annotation update)
DE   S4 domain protein.
GN   GSU0464.
OS   Geobacter sulfurreducens.
OC   Bacteria; Proteobacteria; Deltaproteobacteria; Desulfuromonadales;
OC   Geobacteraceae; Geobacter.
OX   NCBI_TaxID=35554;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=PCA / ATCC 51573;
RX   PubMed=14671304;
RA   Methe B.A., Nelson K.E., Eisen J.A., Paulsen I.T., Nelson W.C.,
RA   Heidelberg J.F., Wu D., Wu M., Ward N.L., Beanan M.J., Dodson R.J.,
RA   Madupu R., Brinkac L.M., Daugherty S.C., DeBoy R.T., Durkin A.S.,
RA   Gwinn M.L., Kolonay J.F., Sullivan S.A., Haft D.H., Selengut J.,
RA   Davidsen T.M., Zafar N., White O., Tran B., Romero C., Forberger H.A.,
RA   Weidman J., Khouri H.M., Feldblyum T.V., Utterback T.R.,
RA   Van Aken S.E., Lovley D.R., Fraser C.M.;
RT   "Genome of Geobacter sulfurreducens: metal reduction in subsurface
RT   environments.";
RL   Science 302:1967-1969(2003).
DR   EMBL; AE017208; AAR33796.1; -.
DR   TIGR; GSU0464; -.
SQ   SEQUENCE   71 AA;  7704 MW;  9C0D6C2C84E02AD9 CRC64;

  Query Match             14.9%;  Score 7;  DB 2;  Length 71;
  Best Local Similarity   100.0%;  Pred. No. 7.9;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         17 GECFVIE 23
              |||||||
Db         65 GECFVIE 71


RESULT 5
Q947L6
ID   Q947L6      PRELIMINARY;      PRT;   127 AA.
AC   Q947L6;
DT   01-DEC-2001 (TrEMBLrel. 19, Created)
DT   01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
DT   01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
DE   Glycine decarboxylase subunit T (Fragment).
GN   Name=gdt;
OS   Beta vulgaris (Sugar beet).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
OC   Caryophyllales; Amaranthaceae; Beta.
OX   NCBI_TaxID=161934;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Schneider K., Weisshaar B., Borchardt D.C., Salamini F.;
RT   "SNP frequency and allelic haplotype structure of Beta vulgaris
RT   expressed genes.";
RL   Mol. Breed. 8:63-74(2001).
DR   EMBL; AF295647; AAL04443.1; -.
DR   GO; GO:0004047; F:aminomethyltransferase activity; IEA.
DR   InterPro; IPR006222; GCV_T.
DR   Pfam; PF01571; GCV_T; 1.
FT   NON_TER       1      1
FT   NON_TER     127    127
SQ   SEQUENCE   127 AA;  13979 MW;  19E599611A064040 CRC64;

  Query Match             14.9%;  Score 7;  DB 2;  Length 127;
  Best Local Similarity   100.0%;  Pred. No. 13;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db         97 CRDKDLA 103


RESULT 6
RL5_METVA
ID   RL5_METVA      STANDARD;      PRT;   181 AA.
AC   P14029;
DT   01-JAN-1990 (Rel. 13, Created)
DT   01-JAN-1990 (Rel. 13, Last sequence update)
DT   01-OCT-2004 (Rel. 45, Last annotation update)
DE   50S ribosomal protein L5P.
GN   Name=rpl5p;
OS   Methanococcus vannielii.
OC   Archaea; Euryarchaeota; Methanococci; Methanococcales;
OC   Methanococcaceae; Methanococcus.
OX   NCBI_TaxID=2187;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=90040717; PubMed=2530355;
RA   Auer J., Spicker G., Boeck A.;
RT   "Organization and structure of the Methanococcus transcriptional unit
RT   homologous to the Escherichia coli 'spectinomycin operon'.
RT   Implications for the evolutionary relationship of 70 S and 80 S
RT   ribosomes.";
RL   J. Mol. Biol. 209:21-36(1989).
CC   -!- FUNCTION: This is 1 of the proteins that binds and probably
CC       mediates the attachment of the 5S RNA into the large ribosomal
CC       subunit, where it forms part of the central protuberance. In the
CC       70S ribosome it contacts protein S13 of the 30S subunit (bridge
CC       B1b), connecting the 2 subunits; this bridge is implicated in
CC       subunit movement. May contact the P site tRNA; the 5S rRNA and
CC       some of its associated proteins might help stabilize positioning
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CC       of ribosome-bound tRNAs (By similarity).
CC   -!- SUBUNIT: Part of the 50S ribosomal subunit; contacts the 5S rRNA
CC       and probably tRNA. Forms a bridge to the 30S subunit in the 70S
CC       ribosome (By similarity).
CC   -!- SIMILARITY: Belongs to the L5P family of ribosomal proteins.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X16720; CAA34693.1; -.
DR   PIR; S05617; R5MX5.
DR   HSSP; P41201; 1MJI.
DR   HAMAP; MF_01333; -; 1.
DR   InterPro; IPR002132; Ribosomal_L5.
DR   InterPro; IPR003236; Ribosomal_L5_mit.
DR   Pfam; PF00281; Ribosomal_L5; 1.
DR   Pfam; PF00673; Ribosomal_L5_C; 1.
DR   ProDom; PD001076; Ribosomal_L5; 1.
DR   ProDom; PD013434; Ribosomal_L5_mit; 1.
DR   PROSITE; PS00358; RIBOSOMAL_L5; 1.
KW   Ribosomal protein; RNA-binding; rRNA-binding; tRNA-binding.
SQ   SEQUENCE   181 AA;  20293 MW;  982486779041892C CRC64;

  Query Match             14.9%;  Score 7;  DB 1;  Length 181;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          21 VIETLTG 27
               |||||||
Db          39 VIETLTG 45


RESULT 7
Q86DG8
ID   Q86DG8      PRELIMINARY;      PRT;   186 AA.
AC   Q86DG8;
DT   01-JUN-2003 (TrEMBLrel. 24, Created)
DT   01-JUN-2003 (TrEMBLrel. 24, Last sequence update)
DT   01-JUN-2003 (TrEMBLrel. 24, Last annotation update)
DE   Putative gland protein G11A06.
OS   Heterodera glycines (Soybean cyst nematode).
OC   Eukaryota; Metazoa; Nematoda; Chromadorea; Tylenchida; Tylenchina;
OC   Tylenchoidea; Heteroderidae; Heteroderinae; Heterodera.
OX   NCBI_TaxID=51029;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=22787455; PubMed=12906116;
RA   Gao B., Allen R., Maier T., Davis E.L., Baum T.J., Hussey R.S.;
RT   "The parasitome of the phytonematode Heterodera glycines.";
RL   Mol. Plant Microbe Interact. 16:720-726(2003).
DR   EMBL; AF500015; AAP30754.1; -.
SQ   SEQUENCE   186 AA;  19221 MW;  A801E9CF13699E34 CRC64;

  Query Match             14.9%;  Score 7;  DB 2;  Length 186;
  Best Local Similarity   100.0%;  Pred. No. 18;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          25 LTGSHKH 31
               |||||||
Db         180 LTGSHKH 186


RESULT 8
Q8LNG9
ID   Q8LNG9      PRELIMINARY;      PRT;   368 AA.
AC   Q8LNG9;
DT   01-OCT-2002 (TrEMBLrel. 22, Created)
DT   01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT   05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
DE   Hypothetical protein OSJNBa0078O01.15.
GN   ORFNames=OSJNBa0078O01.15;
OS   Oryza sativa (japonica cultivar-group).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
OC   Ehrhartoideae; Oryzeae; Oryza.
OX   NCBI_TaxID=39947;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Buell C.R., Yuan Q., Ouyang S., Liu J., Gansberger K., Kim M.M.,
RA   Overton II L.L., Bera J.J., Tsitrin T., Krol M.I., Jarrahi B.B.,
RA   Jin S.S., Koo H., Zismann V., Hsiao J., Blunt S., Vanaken S.S.,
RA   Utterback T.T., Feldblyum T.V., Yang Q.Q., Haas B.J., Suh B.B.,
RA   Peterson J.J., Quackenbush J., White O., Salzberg S.L., Fraser C.M.;
RL   Submitted (SEP-2000) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Buell R.;
RL   Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RA   The Rice Chromosome 10 Sequencing Consortium;
RT   "In-depth view of structure, activity, and evolution of rice
RT   chromosome 10.";
RL   Science 300:1566-1569(2003).
RN   [4]
RP   SEQUENCE FROM N.A.
RA   Buell C.R., Wing R.A., McCombie W.R., Messing J., Yuan Q.;
RL   Submitted (MAY-2003) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AC079888; AAM93694.1; -.
DR   EMBL; AE017109; AAP54466.1; -.
DR   Gramene; Q8LNG9; -.
DR   InterPro; IPR008975; Viral_cap_coat.
KW   Hypothetical protein.
SQ   SEQUENCE   368 AA;  40524 MW;  2595A70161DE151B CRC64;

  Query Match             14.9%;  Score 7;  DB 2;  Length 368;
  Best Local Similarity   100.0%;  Pred. No. 33;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          25 LTGSHKH 31
               |||||||
Db         179 LTGSHKH 185


RESULT 9
Q7Q1J6
ID   Q7Q1J6      PRELIMINARY;      PRT;   401 AA.
AC   Q7Q1J6;
DT   01-MAR-2004 (TrEMBLrel. 26, Created)
DT   01-MAR-2004 (TrEMBLrel. 26, Last sequence update)
DT   01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE   AgCP8214 (Fragment).
GN   Name=agCG50549; ORFNames=ENSANGG00000011967;
OS   Anopheles gambiae str. PEST.
OC   Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygota;
OC   Neoptera; Endopterygota; Diptera; Nematocera; Culicoidea; Anopheles.
OX   NCBI_TaxID=180454;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=PEST;
RA   Anopheles Genome Sequencing Consortium;
RL   Submitted (MAR-2002) to the EMBL/GenBank/DDBJ databases.
CC   -!- CAUTION: The sequence shown here is derived from an
CC       EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which is
CC       preliminary data.
DR   EMBL; AAAB01008980; EAA14507.1; -.
DR   InterPro; IPR003341; DUF139.
DR   InterPro; IPR006209; EGF_like.
DR   Pfam; PF02363; C_tripleX; 7.
DR   PROSITE; PS01186; EGF_2; 3.
FT   NON_TER       1       1
```

```
SQ   SEQUENCE   401 AA;  43118 MW;  9629287CAB405B77 CRC64;

  Query Match             14.9%;  Score 7;  DB 2;  Length 401;
  Best Local Similarity   100.0%;  Pred. No. 35;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         32 CRCKEGY 38
              |||||||
Db        207 CRCKEGY 213


RESULT 10
GCST_MOUSE
ID   GCST_MOUSE     STANDARD;      PRT;   403 AA.
AC   Q8CFA2;
DT   10-OCT-2003 (Rel. 42, Created)
DT   10-OCT-2003 (Rel. 42, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
DE   cleavage system T protein) (GCVT).
GN   Name=Amt;
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=129S6/SvEvTac;
RX   MEDLINE=22375501; PubMed=12487019;
RA   Backofen B., Leeb T.;
RT   "Genomic organization of the murine aminomethyltransferase gene
RT   (Amt).";
RL   DNA Seq. 13:179-183(2002).
CC   -!- FUNCTION: The glycine cleavage system catalyzes the degradation of
CC       glycine (By similarity).
CC   -!- CATALYTIC ACTIVITY: Protein-S-aminomethyldihydrolipoyllysine +
CC       tetrahydrofolate = protein-dihydrolipoyllysine + 5,10-
CC       methylenetetrahydrofolate + NH(3).
CC   -!- SUBUNIT: The glycine cleavage system is composed of four proteins:
CC       P, T, L and H (By similarity).
CC   -!- SUBCELLULAR LOCATION: Mitochondrial (By similarity).
CC   -!- SIMILARITY: Belongs to the gcvT family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AJ437692; CAD26917.1; -.
DR   InterPro; IPR006223; GcvT.
DR   InterPro; IPR006222; GCV_T.
DR   Pfam; PF01571; GCV_T; 1.
DR   TIGRFAMs; TIGR00528; gcvT; 1.
KW   Aminotransferase; Mitochondrion; Transferase; Transit peptide.
FT   TRANSIT       1     28       Mitochondrion (By similarity).
FT   CHAIN        29    403       Aminomethyltransferase.
SQ   SEQUENCE   403 AA;  44009 MW;  4FDEC0DC81492167 CRC64;

  Query Match             14.9%;  Score 7;  DB 1;  Length 403;
  Best Local Similarity   100.0%;  Pred. No. 35;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db        148 CRDKDLA 154


RESULT 11
GCST_SOLTU
ID   GCST_SOLTU     STANDARD;      PRT;   406 AA.
AC   P54260;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
DE   cleavage system T protein) (GCVT).
GN   Name=GDCST;
OS   Solanum tuberosum (Potato).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   lamiids; Solanales; Solanaceae; Solanum.
OX   NCBI_TaxID=4113;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Leaf;
RX   MEDLINE=94218396; PubMed=8165246;
RA   Kopriva S., Bauwe H.;
RT   "T-protein of glycine decarboxylase from Solanum tuberosum.";
RL   Plant Physiol. 104:1079-1080(1994).
CC   -!- FUNCTION: The glycine cleavage system catalyzes the degradation of
CC       glycine.
CC   -!- CATALYTIC ACTIVITY: Protein-S-aminomethyldihydrolipoyllysine +
CC       tetrahydrofolate = protein-dihydrolipoyllysine + 5,10-
CC       methylenetetrahydrofolate + NH(3).
CC   -!- SUBUNIT: The glycine cleavage system is composed of four proteins:
CC       P, T, L and H.
CC   -!- SUBCELLULAR LOCATION: Mitochondrial.
CC   -!- SIMILARITY: Belongs to the gcvT family.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; Z25862; CAA81081.1; -.
DR   PIR; S59948; S59948.
DR   InterPro; IPR006223; GcvT.
DR   InterPro; IPR006222; GCV_T.
DR   Pfam; PF01571; GCV_T; 1.
DR   TIGRFAMs; TIGR00528; gcvT; 1.
KW   Aminotransferase; Mitochondrion; Transferase; Transit peptide.
FT   TRANSIT       1     29       Mitochondrion (By similarity).
FT   CHAIN        30    406       Aminomethyltransferase.
SQ   SEQUENCE   406 AA;  44276 MW;  F52F4A13D70E33AD CRC64;

  Query Match             14.9%;  Score 7;  DB 1;  Length 406;
  Best Local Similarity   100.0%;  Pred. No. 36;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db        150 CRDKDLA 156


RESULT 12
Q6C340
ID   Q6C340      PRELIMINARY;      PRT;   406 AA.
AC   Q6C340;
DT   01-OCT-2004 (TrEMBLrel. 28, Created)
DT   01-OCT-2004 (TrEMBLrel. 28, Last sequence update)
DT   01-OCT-2004 (TrEMBLrel. 28, Last annotation update)
DE   Similar to sp|P48015 Saccharomyces cerevisiae YDR019c GCV1 glycine
DE   decarboxylase.
GN   ORFNames=YALI0F02849g;
OS   Yarrowia lipolytica (Candida lipolytica).
OC   Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
OC   Saccharomycetales; Dipodascaceae; Yarrowia.
OX   NCBI_TaxID=4952;
RN   [1]
RP   SEQUENCE FROM N.A.
```

```
RC   STRAIN=CLIB99;
RG   GENOLEVURES;
RA   Dujon B., Sherman D., Fischer G., Durrens P., Casaregola S.,
RA   Lafontaine I., de Montigny J., Marck C., Neuveglise C., Talla E.,
RA   Goffard N., Frangeul L., Aigle M., Anthouard V., Babour A., Barbe V.,
RA   Barnay S., Blanchin S., Beckerich J.M., Beyne E., Bleykasten C.,
RA   Boisrame A., Boyer J., Cattolico L., Confanioleri F., de Daruvar A.,
RA   Despons L., Fabre E., Fairhead C., Ferry-Dumazet H., Groppi A.,
RA   Hantraye F., Hennequin C., Jauniaux N., Joyet P., Kachouri R.,
RA   Kerrest A., Koszul R., Lemaire M., Lesur I., Ma L., Muller H.,
RA   Nicaud J.M., Nikolski M., Oztas S., Ozier-Kalogeropoulos O.,
RA   Pellenz S., Potier S., Richard G.F., Straub M.L., Suleau A.,
RA   Swennene D., Tekaia F., Wesolowski-Louvel M., Westhof E., Wirth B.,
RA   Zeniou-Meyer M., Zivanovic I., Bolotin-Fukuhara M., Thierry A.,
RA   Bouchier C., Caudron B., Scarpelli C., Gaillardin C., Weissenbach J.,
RA   Wincker P., Souciet J.L.;
RT   "Genome evolution in yeasts.";
RL   Nature 430:35-44(2004).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=CLIB99;
RA   Genoscope;
RL   Submitted (JUL-2004) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; CR382132; CAG77727.1; -.
SQ   SEQUENCE   406 AA;  43990 MW;  C4FA50AB6C55857B CRC64;

  Query Match             14.9%;  Score 7;  DB 2;  Length 406;
  Best Local Similarity   100.0%;  Pred. No. 36;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db        153 CRDKDLA 159


RESULT 13
GCST_FLAAN
ID   GCST_FLAAN     STANDARD;      PRT;   407 AA.
AC   O49849;
DT   15-JUL-1998 (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   01-OCT-2004 (Rel. 45, Last annotation update)
DE   Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
DE   cleavage system T protein) (GCVT).
GN   Name=GDCST;
OS   Flaveria anomala.
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   campanulids; Asterales; Asteraceae; Asteroideae; Tageteae; Flaveria.
OX   NCBI_TaxID=35877;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Leaf;
RA   Nan Q., Chu C.-C., Bauwe H.;
RT   "The GDCST gene encoding T-protein of the glycine cleavage system in
RT   the C3-C4 intermediate plant Flaveria anomala.";
RL   (er) Plant Gene Register PGR98-006.
CC   -!- FUNCTION: The glycine cleavage system catalyzes the degradation of
CC       glycine.
CC   -!- CATALYTIC ACTIVITY: Protein-S-aminomethyldihydrolipoyllysine +
CC       tetrahydrofolate = protein-dihydrolipoyllysine + 5,10-
CC       methylenetetrahydrofolate + NH(3).
CC   -!- SUBUNIT: The glycine cleavage system is composed of four proteins:
CC       P, T, L and H.
CC   -!- SUBCELLULAR LOCATION: Mitochondrial.
CC   -!- SIMILARITY: Belongs to the gcvT family.
CC   ---------------------------------------------------------------------
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CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; Z71184; CAA94902.1; -.
DR   InterPro; IPR006223; GcvT.
DR   InterPro; IPR006222; GCV_T.
DR   Pfam; PF01571; GCV_T; 1.
DR   TIGRFAMs; TIGR00528; gcvT; 1.
KW   Aminotransferase; Mitochondrion; Transferase; Transit peptide.
FT   TRANSIT       1     29       Mitochondrion (Potential).
FT   CHAIN        30    407       Aminomethyltransferase.
SQ   SEQUENCE   407 AA;  44279 MW;  7F1BE2896CDD1A59 CRC64;

  Query Match             14.9%;  Score 7;  DB 1;  Length 407;
  Best Local Similarity   100.0%;  Pred. No. 36;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db        150 CRDKDLA 156


RESULT 14
GCST_FLAPR
ID   GCST_FLAPR     STANDARD;      PRT;   407 AA.
AC   P49363;
DT   01-FEB-1996 (Rel. 33, Created)
DT   01-FEB-1996 (Rel. 33, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
DE   cleavage system T protein) (GCVT).
GN   Name=GDCST;
OS   Flaveria pringlei.
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   campanulids; Asterales; Asteraceae; Asteroideae; Tageteae; Flaveria.
OX   NCBI_TaxID=4226;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Leaf;
RX   MEDLINE=95284371; PubMed=7766903;
RA   Kopriva S., Turner S.R., Rawsthorne S., Bauwe H.;
RT   "T-protein of the glycine decarboxylase multienzyme complex: evidence
RT   for partial similarity to formyltetrahydrofolate synthetase.";
RL   Plant Mol. Biol. 27:1215-1220(1995).
CC   -!- FUNCTION: The glycine cleavage system catalyzes the degradation of
CC       glycine.
CC   -!- CATALYTIC ACTIVITY: Protein-S-aminomethyldihydrolipoyllysine +
CC       tetrahydrofolate = protein-dihydrolipoyllysine + 5,10-
CC       methylenetetrahydrofolate + NH(3).
CC   -!- SUBUNIT: The glycine cleavage system is composed of four proteins:
CC       P, T, L and H.
CC   -!- SUBCELLULAR LOCATION: Mitochondrial.
CC   -!- SIMILARITY: Belongs to the gcvT family.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; Z25858; CAA81077.1; -.
DR   PIR; S56660; S56660.
DR   InterPro; IPR006223; GcvT.
DR   InterPro; IPR006222; GCV_T.
DR   Pfam; PF01571; GCV_T; 1.
DR   TIGRFAMs; TIGR00528; gcvT; 1.
KW   Aminotransferase; Mitochondrion; Transferase; Transit peptide.
FT   TRANSIT       1     29       Mitochondrion (Potential).
FT   CHAIN        30    407       Aminomethyltransferase.
SQ   SEQUENCE   407 AA;  44353 MW;  8B87F7EBE679F7C0 CRC64;
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  Query Match             14.9%;  Score 7;  DB 1;  Length 407;
  Best Local Similarity   100.0%;  Pred. No. 36;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db        150 CRDKDLA 156


RESULT 15
GCST_FLATR
ID   GCST_FLATR     STANDARD;      PRT;   407 AA.
AC   O23936;
DT   15-JUL-1998 (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   01-OCT-2004 (Rel. 45, Last annotation update)
DE   Aminomethyltransferase, mitochondrial precursor (EC 2.1.2.10) (Glycine
DE   cleavage system T protein) (GCVT).
GN   Name=GDCST;
OS   Flaveria trinervia (Clustered yellowtops).
OC   Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
OC   Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; asterids;
OC   campanulids; Asterales; Asteraceae; Asteroideae; Tageteae; Flaveria.
OX   NCBI_TaxID=4227;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Leaf;
RA   Cossu R., Bauwe H.;
RT   "The GDCST gene encoding T-protein of the glycine cleavage system in
RT   the C4 plant Flaveria trinervia.";
RL   (er) Plant Gene Register PGR98-007.
CC   -!- FUNCTION: The glycine cleavage system catalyzes the degradation of
CC       glycine.
CC   -!- CATALYTIC ACTIVITY: Protein-S-aminomethyldihydrolipoyllysine +
CC       tetrahydrofolate = protein-dihydrolipoyllysine + 5,10-
CC       methylenetetrahydrofolate + NH(3).
CC   -!- SUBUNIT: The glycine cleavage system is composed of four proteins:
CC       P, T, L and H.
CC   -!- SUBCELLULAR LOCATION: Mitochondrial.
CC   -!- SIMILARITY: Belongs to the gcvT family.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; Z99769; CAB16917.1; -.
DR   InterPro; IPR006223; GcvT.
DR   InterPro; IPR006222; GCV_T.
DR   Pfam; PF01571; GCV_T; 1.
DR   TIGRFAMs; TIGR00528; gcvT; 1.
KW   Aminotransferase; Mitochondrion; Transferase; Transit peptide.
FT   TRANSIT       1     29       Mitochondrion (Potential).
FT   CHAIN        30    407       Aminomethyltransferase.
SQ   SEQUENCE   407 AA;  44285 MW;  08E3DD9C329F9891 CRC64;

  Query Match             14.9%;  Score 7;  DB 1;  Length 407;
  Best Local Similarity   100.0%;  Pred. No. 36;
  Matches    7;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 CRDKDLA 11
              |||||||
Db        150 CRDKDLA 156


Search completed: November  2, 2004, 13:45:29
Job time : 195 secs
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